A Review of Education in Sikkim with Northeast India: A journey towards SDG-4

Ram Prasad Nepal[1] , **Pradip Kumar Das**[2,]

1. *Ph.D. Scholar, Dept. of Management, Sikkim University, Sikkim, India*
2. *Assistant Professor, Dept. of Management, Sikkim University, Sikkim, India*

Corresponding author:

Ram Prasad Nepal, *Ph.D. Scholar, Dept. of Management, Sikkim University, Sikkim, India,*

ORCID: https://orcid.org/0009-0000-2884-0309

Abstract

Despite various government initiatives, from the Right to Free and Compulsory Education Act (2009), to the National Education Policy (2020), achieving universal access to quality education remains a persistent challenge. Key obstacles include inconsistent educational funding, ineffective implementation, and inadequate infrastructure. Critical factors influencing educational outcomes in Sikkim and the North Eastern regions include dropout rates, literacy rates, gross enrolment ratio (GER), gender parity index (GPI), and student-teacher ratios. Additionally, availability of essential school infrastructure such as sanitation facilities, drinking water, and information and communication technology (ICT) are the deciding factors. From a policy standpoint, addressing these issues requires the government to focus on enhancing IT infrastructure to ensure equitable access to high-quality education for all. Bridging the digital divide involves investing in broadband connectivity, affordable devices, digital literacy programs, and teacher training. Moreover, promoting online learning platforms, ensuring robust cybersecurity measures, and implementing equitable funding models are critical steps in creating a more inclusive education system. By prioritizing these efforts, policymakers can foster an environment where individuals, regardless of their location or socio-economic status, can thrive in an increasingly digital world. These measures not only ensure fairness but also prepare future generations to succeed in a technology-driven society.

Keywords: Gross Enrolment Ratio, Schools, Literacy Rate, Dropout Rate, Sikkim, North Eastern India, Education, Gender Parity Index

1. Introduction

By improving soft skills, analytical abilities, and cognitive aptitudes, education plays a critical role in promoting holistic individual development and empowering people to use their proficiencies effectively to boost productivity (Singh, M. et al., 2023). Additionally, the field of education is changing quickly and is being impacted by globalization more and more. Education has become a major factor in knowledge-based economic competitiveness in the modern, interconnected global economy (Awaah, 2021). Education is a key component in building human capital, which is necessary for both economic growth and nation-building. Economic growth and education are positively correlated, according to the human capital hypothesis, which emphasizes that better education raises human capital levels, boosts productivity, and ultimately results in long-term economic growth. Education has been widely recognized as a fundamental human right since the 1948 ratification of the Universal Declaration of Human Rights. The UNESCO Convention against Discrimination in Education (UNESCO, 1960) further strengthened this idea, which emphasizes non-discrimination and every person's right to education. According to the agreement, discrimination in education is against human rights.

In India, all children between the ages of 6 and 14 are guaranteed free and compulsory education in their local school until they have completed elementary school, according to the Right to Free and Compulsory Education Act (2009). This legislative framework demonstrates the country's dedication to guaranteeing all children fair access to education. The *National Education Policy (NEP) 2020* marks a transformative overhaul of India's education framework, updating policies that had remained unchanged for 34 years. This policy envisions critical reforms aimed at revitalizing the Indian education system, striking a harmonious balance between preserving traditional values and adopting interdisciplinary approaches (IndianEra, 2020).

In exploring the role of education in driving economic development, it becomes essential to analyze the key factors influencing educational attainment, particularly in the context of states like Sikkim. The history of modern-day Bayul Demazong began in 1642 A.D. with the coronation of Phuntsog Namgyal, the first Chogyal (monarch) of Sikkim, in Yuksom Norbugang, West Sikkim. This significant event was officiated by three esteemed Lamas representing the northern, western, and southern regions. Over the next three centuries, twelve generations of Chogyals ruled Sikkim, a small Himalayan kingdom.

However, the monarchy faced significant political instability during 1972–1973. This unrest culminated in the abolition of the Chogyal institution in 1975. Subsequently, Sikkim was officially integrated into India as its 22nd state on May 16, 1975, through the 36th Constitutional Amendment Act (Jana, 2013; Subba, 2008). One of India's smallest states, Sikkim is located in the eastern Himalayas in the country's northeast. Its neighbors are West Bengal to the south, Bhutan to the southeast, Nepal to the west, and the Tibet Autonomous Region of China to the north and northeast. In the southeast is Gangtok, the state capital. Sikkim's strategic location along multiple international borders gives it considerable political and strategic significance for India, despite its tiny size.

According to the 2011 census, there were 607,688 people living in Sikkim, in an area of 7,096 km which is only 0.2% of India's total landmass. Namchi, Gyalshing, Pakyong, Mangan, Gangtok, and Soreng are the six districts that make up the state's administrative division (SikkimGovt., 2016). Known for its unique cultural heritage and unspoiled natural beauty, Sikkim epitomizes pristine purity and excellence. Its favorable climate, geographic location, and high environmental quality provide an ideal setting for the establishment of high-quality educational institutions. These conditions foster innovation and support the delivery of superior education (Bhutia, 2012). This study makes four key contributions to the existing literature. First, while there is a substantial body of research on the education system in India, studies specifically focused on Sikkim and the broader North East region remain limited. This paper aims to fill this gap by analyzing the various levels of educational establishments in Sikkim, including primary, secondary, higher secondary, and higher education. The analysis is based on secondary data drawn from published reports by sources such as NITI Aayog, the Census of India (2001 and 2011), and the Ministry of Education (MoE). Descriptive statistics are employed to analyze the data where applicable. Key indicators examined in the study include the number of schools, enrollment figures, Gross Enrolment Ratio (GER), Gender Parity Index (GPI), dropout rates, literacy rates, and the availability of colleges and universities in Sikkim. Second, this study identifies the key factors influencing the quality of education in Sikkim, contributing to the development of human capital within the state. Third, while Sikkim, known for its natural beauty, has been a part of India since 1975, to the best of our knowledge, this is the first study of its kind focusing exclusively on the state's education system.

Finally, the study compares the progress of educational development in Sikkim with that of India as a whole and other Northeastern states. This comparative analysis provides a comprehensive perspective on the state of education in Sikkim, highlighting its unique advancements and challenges within the broader regional and national contexts.

2. Literature Review

Gautam et al. (2016) employ the Capability Approach to critique the shortcomings of India's contemporary education system, stressing the urgent need to invest in education for the country's large population. They highlight the importance of addressing disparities in the quality and distribution of educational opportunities in order to prevent the potential transformation of the youth population from an asset to a liability. The authors advocate for the development of a National Education Policy that emphasizes both qualitative and quantitative growth of educational institutions to cater to the needs of industry and individuals alike.

According to Gupta (2019), the Indian educational system's contribution to overall national growth is limited because it does not provide students with employment skills. According to the study's findings, effective government action is necessary to address these issues and advance the nation's development. In his 2017 study, Vijayakumari examines the educational systems of India and other nations, looking at important traits and variables that affect Indian students' choices to continue their studies overseas. The study emphasizes how important it is to bring India's educational system into compliance with global norms. The study illustrates the differences between India and other countries in terms of quality, cost, expertise, and employment opportunities through a comparative comparison.

In their work Gulia (2021) examines metrics such as the Gross Enrollment Ratio, dropout rates, number of educational institutions, and English literacy in order to compare Haryana's educational system to that of its bordering states. Haryana has acceptable dropout rates for ages 6 to 14, and its literacy rates are now higher than the national average, even though its gross enrollment ratio for ages 6 to 11 is lower than that of India and its surrounding states. According to Dayal (2023), the effectiveness of online learning, which is dependent on the infrastructure that is already in place, has worsened the educational gap across socioeconomic classes and lowered the standard of education. Therefore, improving educational quality and promoting teachers' mental health require resolving the gaps in access to digital learning and offering thorough teacher training.

In their study, Bhatia (2011) explores the factors contributing to value-based higher education and compares India's higher education system with those of six countries: Australia, China, the United States, the United Kingdom, Brazil, and South Africa. The authors highlight substantial growth in Indian universities and colleges between 1950 and 2006. However, they also note that India's gross enrollment ratio remains low, with only 20% in urban areas and 6% in rural areas. Additionally, public expenditure on education is considerably low, at just $406 per student. Shaturaev (2021) conducts a comparative analysis of the educational systems in Uzbekistan and Indonesia, highlighting the challenges both countries face despite significant investments in education. While Uzbekistan has directed considerable resources toward the education sector, it has yet to achieve satisfactory results. Similarly, in Indonesia, despite substantial funding, learning outcomes remain suboptimal. The study calls for reforms in teaching methodologies and an increase in investment to enhance educational outcomes in both nations.

The National Policy on Education (NPE) 1986 and NPE 2016, which suggest important changes for higher education in India, are examined by Majid (2024). Enhancing quality, recruiting academics, encouraging autonomy, expanding research, and streamlining accrediting procedures are the main goals of these reforms. Using causal research technique, Vishwakarma (2023) examines how NEP 2020 and digitization affect society and quality of life. According to the findings, NEP 2020 improves living quality by highlighting the necessity of flexible, lifelong learning and advancements in digital infrastructure. An examination of India's educational progress by Kaleem (2022) shows both achievements and flaws in the system. There are differences amongst states as a result of the central, state, and local levels of government managing education financing and control. The study aims to assess important problems in the Indian educational system and provide possible fixes. Negi (2023) promotes Sikkim's educational advancement in the larger framework of the Northeastern Region of India. Even with significant advancements, Sikkim still has difficulties achieving its educational goals. With an emphasis on school education, the study assesses key performance indicators and pinpoints roadblocks for further advancement.

3. Objectives, Data Sources, and Methodology:

3.1 Goals: To understand the current state of Sikkim's education system and compare it with other states in the northeastern region and India, this study will examine the state's educational system in detail, paying particular attention to important factors like school enrolment, school count, dropout rates, and the existence of educational institutions. This analysis will provide important information for enhancing Sikkim's educational results.

3.2 Data Sources: This study uses secondary data from a variety of sources, such as NITI Aayog, the 2001 and 2011 Census of India, Ministry of Education studies like UDISE+ and AISHE, and publications from the Sikkim government. It also includes pertinent articles from publications and journals. When necessary, descriptive statistics are used for data analysis. By examining important metrics such educational infrastructure, the Gross Enrollment Ratio (GER), the Gender Parity Index (GPI), dropout rates, and literacy rates, the study conducts a complete analysis of the Sikkim educational system.

3.3 Methodology: This study uses a mixed-method approach, drawing on secondary data from sources such as the Publications from Government of Sikkim and Ministry of Education, Census of India, and NITI Aayog. Indicators such as school enrolment, dropout rates, GER, GPI, literacy rates, and school count are analyzed using descriptive statistics. Context is also provided by pertinent journal and periodical articles. This all-encompassing strategy makes it possible to analyze Sikkim's educational system in detail and provides suggestions for enhancement.

4. Results & Analysis:

Modern education in Sikkim traces its origins to the arrival of Christian missionaries in the late 18th century. By 1951, the literacy rate in Sikkim was below 7%. In 1954, the establishment of the education department marked a significant milestone, leading to a considerable increase in the number of schools throughout the state. A pivotal decision was made in 1962 to adopt English as the medium of instruction in government schools, distinguishing Sikkim from other states, which typically used regional languages. This decision was driven by the belief that English was essential for scientific studies and government employment, while also serving as a neutral language to mitigate conflicts arising from the region's linguistic diversity, including languages such as Bhutia, Lepcha, and Nepali (Dewan, 2012).

The expansion of the education department was further supported by its decentralized structure, with offices established in each district. Sikkim has made significant progress in education, reflected in its literacy rates of 81.42% in 2011 and 82.20% in 2022, showing an increase of 0.78 percentage points over the years (Govt. of Sikkim, 2022). Today, Sikkim is home to 887 government-funded schools (both Central and State) and 376 privately run unaided schools. The state also boasts a diverse range of higher education institutions, including one Central University, one National Institute of Technology, one IGNOU center, one State University, five State private universities, 17 government-funded colleges and polytechnics, and six private colleges (HRDDSikkim; AISHE, All India Survey on Higher Education, 2010-11; AISHE, 2020-21; AISHE, 2021-22; UDISE+, 2020-21; UDISE+, 2021-22).

4.1 School Count Comparison: Sikkim, NE States, and the Nation

Education, particularly school education, lays the foundation for individual growth, societal progress, and economic development, fostering critical thinking, lifelong learning, and social cohesion essential for a prosperous future (Thapa, 2020).

In examining the educational landscape of India, it becomes essential to delve into regional variations to understand the distribution of educational resources (Ahmad, 2013). This analysis focuses on comparing the number of schools across Sikkim, the North Eastern states, and the broader national context. By scrutinizing these figures, we gain insight into the educational infrastructure and priorities within these regions, highlighting both similarities and disparities. The number of schools within a state or country serves as a crucial indicator of educational accessibility, reflecting the extent of people's opportunities to access formal learning (Nayak, 2013).

Table 1: No. of schools in Sikkim and other NE states of India

States	Year	Total Schools	Government Schools	Private Schools
India	2010-2011	1329307	1064700	264607
	2015-2016	1367414	1043151	324263
	2021-2022	1489115	1104866	384249
Sikkim	**2010-2011**	**1201**	**895**	**306**
	2015-2016	**1279**	**870**	**409**
	2021-2022	**1259**	**883**	**376**
Arunachal Pradesh	2010-2011	4440	4101	339
	2015-2016	3982	3464	518
	2021-2022	3603	3053	550
Assam	2010-2011	53859	44371	9488
	2015-2016	57982	50143	7839
	2021-2022	60859	49331	11528
Manipur	2010-2011	3760	2402	1358
	2015-2016	4740	3308	1432
	2021-2022	4617	3472	1145
Meghalaya	2010-2011	12377	7596	4781
	2015-2016	13162	7764	5398
	2021-2022	14600	11955	2645
Mizoram	2010-2011	2892	2338	554
	2015-2016	3068	2277	791
	2021-2022	3911	2793	1118
Nagaland	2010-2011	2826	2101	725
	2015-2016	2799	2092	707
	2021-2022	2718	1960	758
Tripura	2010-2011	4386	4217	169
	2015-2016	4657	4322	335
	2021-2022	4929	4305	624

Sources: State Report Card-2010-11 (SES, 2010-11)*, UDISE+ 2021-22* (UDISE+, Unified District Information System for Education Plus (UDISE+), 2021-22)*, published by Ministry of Education*

There were 1,71,482 schools in the Northeastern states in the year 2010-11 and the same increased by 1.23% totalling to 1,92,992 by 2021-22. The share of school establishments by type is around 80% and 20 % for government schools and private schools respectively. Additionally, a significant majority of these schools are situated in rural areas. In 2010-11 there were 1,201 schools in Sikkim out of which 74.5% are government and 25.5% private schools (SES, 2010-11; STATE_REPORT-CARDS, 2010-11). There was a 0.95% decadal growth in the number of schools in Sikkim which are counted total school for 1,259 in 2021-22. The number of government schools increased by 58 and private schools decreased by 12 numbers in comparison to 2010-11 and 2021-22. In Sikkim, 83% of schools are situated in rural areas.

This illustrates the substantial role of the government in facilitating education for the populace. Nationally, there are a total of 14,89,115 schools as of 2021-22, with 80% of them being government-run, and 82.1% situated in rural areas. Within the North Eastern States, Assam boasts the highest number of schools, while Sikkim has fewer. The predominance of government-run schools in the region suggests that private investment in education may not yield significant profits. Nonetheless, it underscores the government's fundamental responsibility to furnish free and accessible education to all.

The government plays an active role in empowering people through education. The Government of India has implemented numerous schemes aimed at educating the masses. Schemes such as Samagra Siksha, Mid-Day Meal Such, Right to Education, Kasturba Gandhi Balika Vidyalaya, PM Shri Schools, and the groundbreaking National Education Policy 2020 (NEP-2020) have played pivotal roles in the rapid expansion of the school education system in India and the North Eastern states over the past decade.

Samagrashiksha (2018) has set a thorough curriculum that covers pre-kindergarten through class 12 for the school education sector. It seeks to increase the efficacy of educational institutions by guaranteeing fair learning opportunities and results. The Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA), and Teacher Education programs are combined into this effort (Aithal, 2019). The program intends to improve transition rates between different levels of school education and facilitate universal access for children to complete their schooling.

The ‘Right to Education is a Fundamental Right’ was established in India in 2002 by the 86th Constitutional Amendment and Article 21A. On August 26, 2009, the ‘Right to Free and Compulsory Education Act’ was subsequently passed into law. Every kid between the ages of 6 and 14 is guaranteed free and obligatory education until they have completed elementary school (Kalyani, 2020). Upon its implementation on April 1, 2010, India joined 135 other countries in recognizing education as a fundamental right for its citizens, equating it with the Right to life.

Table 2: Student Enrolment Ratio and Types of Schools in Sikkim and Northeast India

States	2010-2011			2021-2022		
	Total Gross Enrolment	**Govt. Schools**	**Private Schools**	**Total Gross Enrolment**	**Govt. Schools**	**Private Schools**
India	189166464	130058559	59107905	258551253	170279937	88271316
Sikkim	**126542**	**102839**	**23703**	**135963**	**88382**	**47581**
Arunachal Pradesh	331997	270295	61702	349708	254768	94940
Assam	5143018	4097714	1045304	7254760	5659625	1595135
Manipur	488523	193158	295365	677254	247088	430166
Meghalaya	658673	336648	322025	1127755	862088	265667
Mizoram	234485	154568	79917	302653	165441	137212
Nagaland	411383	191466	219917	443710	170219	273491
Tripura	610098	557853	52245	698723	569691	129032

Sources: State Report Card-2010-11, UDISE+ 2021-22, Ministry of Education

Enrolment in Sikkim's schools witnessed a modest increase from 126,542 students in 2010-11 to 135,963 students in 2021-22, primarily driven by government school enrolments. The state's enrolment growth rate remained stable at 0.93%, reflecting gradual population growth. With an average of 108 students per school in 2021-22, Sikkim's education sector plays a significant role, contributing approximately 4% of the state's GSDP. Moreover, Sikkim's government has implemented various initiatives, including providing free uniforms, textbooks, notebooks, school bags, shoes, and raincoats up to class XII, as part of its commitment to enhancing access to education. Additionally, the eight Northeastern states collectively contribute 4.25% of India's total enrolment, highlighting the region's significance in the national educational landscape (HRDD Sikkim).

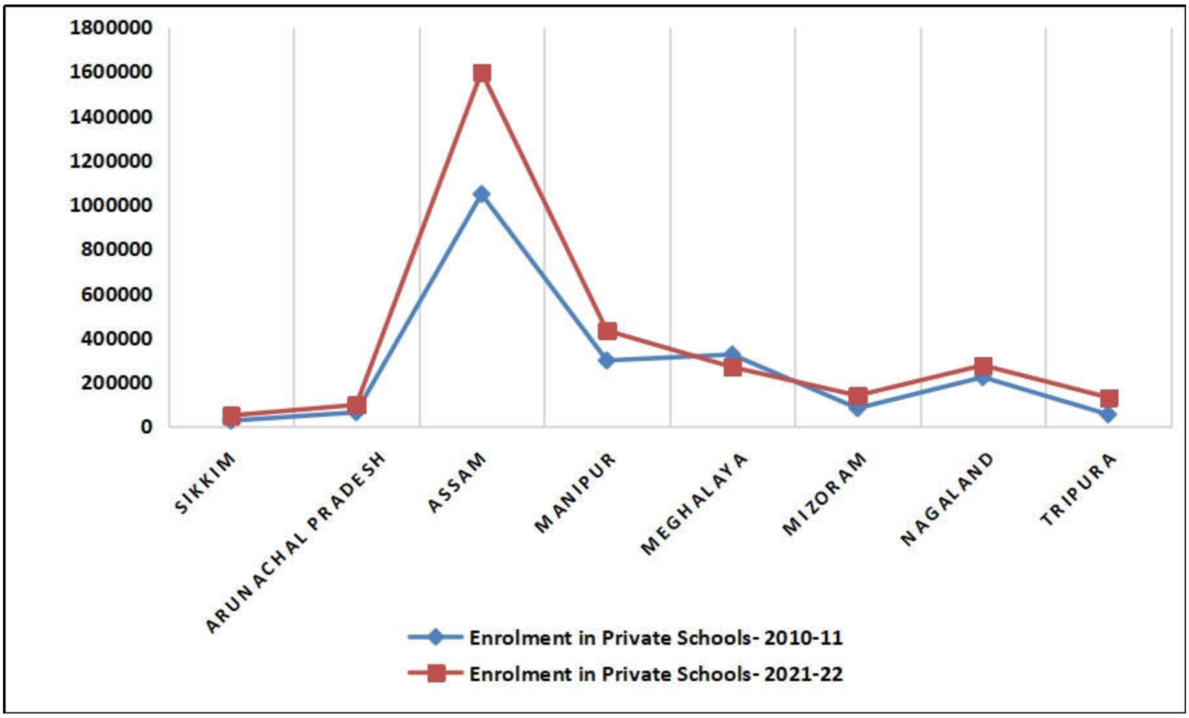

Fig 1: Student Enrolment in Private Schools in NE states. The data presented in the table indicates a notable trend of increasing enrolments in private schools across all Northeastern states, except Meghalaya. This trend suggests a growing perception among parents regarding the perceived inadequacy of education quality in government schools. According to Sharma (2009) parents tend to view private schools as more accountable and capable of providing higher-quality education.

4.2 Gross Enrolment Ratio (GER)

The GER indicates the total enrolment in a particular level of education as a percentage of the eligible official school-age population for that level. A high GER suggests widespread participation, even beyond the official age group. Achieving a GER of 100% is important but not sufficient to enroll all eligible individuals in education. GER may exceed 100% due to over-aged or under-aged students, including those who entered early or late or repeated grades (Nigam, D. et.al, 2020). *The formula for calculating GER is* GER = (Number of enrolled students/Population in corresponding age group in each period) × 100

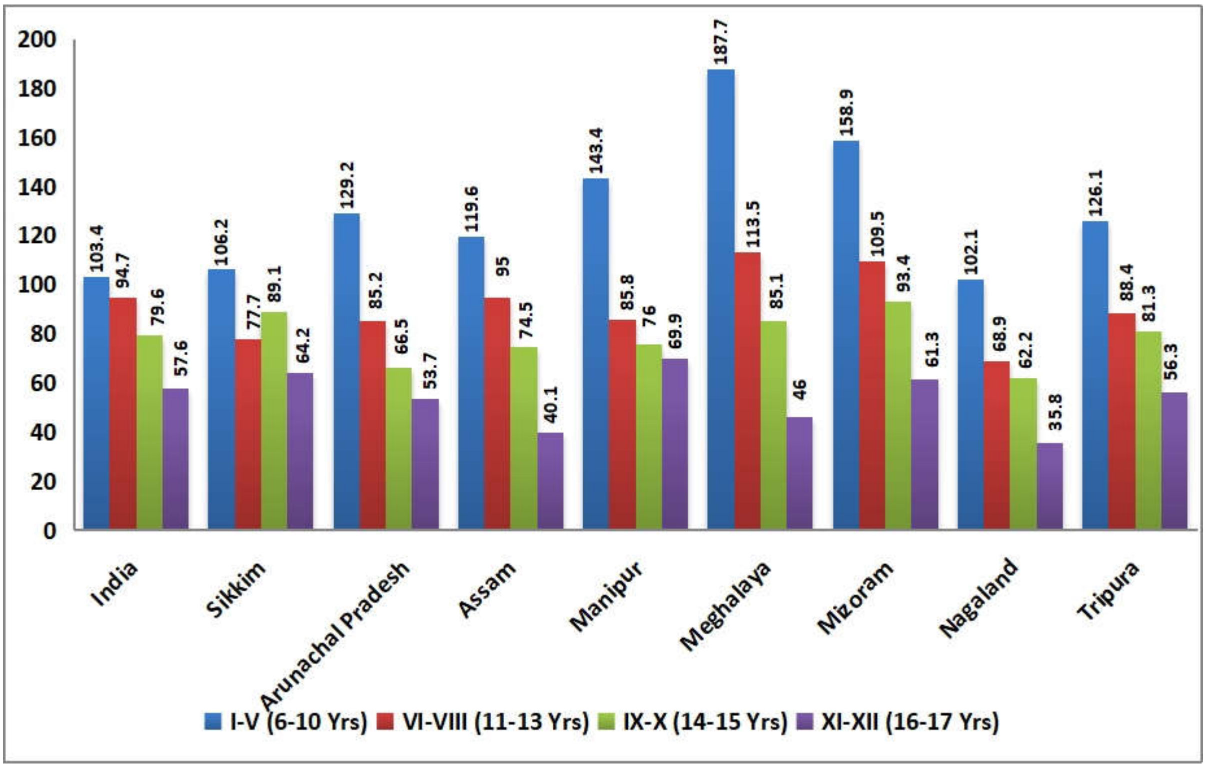

Fig 2: Gross Enrolment Ratio (GER) in Sikkim and other NE states of India in 2021-22

Sources: UDISE+ 2021-22, Ministry of Education

The Gross Enrolment Ratio (GER) data for Sikkim and other Northeastern states compared to the national average indicates varying levels of participation in education across different levels. Sikkim generally exceeds the national average GER across different education levels: for grades I-V (6-10 years), Sikkim has a GER of 106.2% compared to the national average of 103.4%; for grades VI-VIII (11-13 years), Sikkim's GER is 77.7% compared to India's 94.7%; for grades IX-X (14-15 years), Sikkim's GER stands at 89.1%, exceeding India's 79.6%; and for grades XI-XII (16-17 years), Sikkim's GER is 64.2% compared to India's 57.6%.

Additionally, Arunachal Pradesh, Manipur, and Mizoram also exhibit higher GER compared to the national average across various levels, while Meghalaya shows exceptionally high GER in grades I-V (187.7%), but lower GER in grades IX-X (85.1%) and XI-XII (46%) compared to the national average. Assam and Tripura generally align closely with or slightly surpass the national average GER, while Nagaland consistently presents lower GER across all categories compared to the national average. These variations highlight the diverse educational landscape in the North-eastern region, indicating both successes and challenges in ensuring universal access to education across different levels.

4.3 Rates of Drop-Out

A person who leaves the formal education system before finishing a certain level of study or before hitting a set educational milestone is known as a dropout. This divergence can happen at several phases, such as intermediate or non-terminal moments within a particular educational level or between school stages (Sridevi, 2019). The percentage of students who leave the educational system at any particular period is measured by the dropout rate. The following rule must be adhered to when estimating the promotion rate, repetition rate, and dropout rate: The promotion rate, repetition rate, and dropout rate must all add up to 100%, and none of these rates may be negative.

Table-3: Drop Out Rate (DOR) in Sikkim and other NE States of India

States	2010-2011			2021-2022		
	Primary	**Upper Primary**	**Secondary**	**Primary**	**Upper Primary**	**Secondary**
India	27.0	40.6	49.3	1.5	3.0	12.6
Sikkim	**18.4**	**42.8**	**69.9**	**1.8**	**0.0**	**11.9**
Arunachal Pradesh	43.0	50.5	61.7	9.3	6.7	11.7
Assam	29.9	54.0	77.4	6.0	8.8	20.3
Manipur	45.7	52.8	45.3	13.3	5.6	1.3
Meghalaya	58.4	70.4	77.4	9.8	10.6	21.7
Mizoram	37.9	36.7	53.7	6.4	2.7	11.9
Nagaland	39.9	45.4	75.1	5.0	4.0	17.5
Tripura	31.1	48.2	58.4	1.1	4.5	8.3

Sources: Statistics of school education- 2010, UDISE+ 2021-22, Ministry of Education

Table- 3 presents dropout rates (DOR) across different levels of education in Sikkim and other northeastern (NE) states of India for the academic years 2010-2011 and 2021-2022. In 2010-2011, Sikkim exhibited relatively lower dropout rates compared to other NE states across primary, upper primary, and secondary levels, with percentages standing at 18.4% (primary), 42.8% (upper primary), and 69.9% (secondary). However, by 2021-2022, Sikkim's dropout rates remained low in primary and secondary levels, standing at 1.8% (primary) and 11.9% (secondary), but saw an alarming decrease in the upper primary level, reaching 0.0%. Conversely, other NE states displayed varying trends.

Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura showed reductions in dropout rates across most levels from 2010-2011 to 2021-2022, albeit with variations. Notably, Manipur experienced a substantial decrease in secondary dropout rate from 45.3% to 1.3%. However, Meghalaya's dropout rates remained persistently high across all levels. These statistics underscore the need for targeted interventions and policies to address dropout rates, particularly in states with persistently high percentages, to ensure equitable access to education and mitigate the adverse impacts of dropout on individual and societal development in the region.

4.4 Pupil-Teacher Ratio (PTR)

The Pupil-Teacher Ratio represents the number of students per teacher in an educational institution. Smaller class sizes facilitate better communication and learning experiences (Chakrabarti, 2018). Research consistently shows that smaller classes enhance teacher effectiveness and enable personalized attention to students' needs. Given the significant role teachers play in shaping students' character and outlook, maintaining smaller class sizes is crucial for effective education delivery and individual student development. PTR serves as a crucial indicator for optimizing education quality and ensuring equitable learning opportunities for all students (Jana, 2013).

Samagra Shiksha, an ambitious scheme for school education emphasizes maintaining an optimal Pupil-Teacher Ratio (PTR) for quality education, with norms of 20:1 for primary, 30:1 for upper primary, and secondary levels. The scheme aims for a PTR of 20:1 across all levels by 2025, requiring additional teacher hiring. PTR variations may occur based on state needs, ensuring all children access qualified teachers (Samagrashiksha, 2018). Among OECD countries, the average class size at the lower secondary level stands at 23 students per class.

Remarkably, nations like the UK, Iceland, and Finland continue to have smaller class sizes—usually no more than 19 students. Class sizes in Turkey, Korea, and China, on the other hand, vary greatly, from 28 to 54 pupils per class. These discrepancies demonstrate how different countries approach the delivery of education and the distribution of resources (Barra, 2019).

Table- 4: Pupil-Teacher Ratio (PTR) Trends in Sikkim and NE States

States	2010-2011				2021-2022			
	Primary	**Upper Primary**	**Secondary**	**Higher Secondary**	**Primary**	**Upper Primary**	**Secondary**	**Higher Secondary**
India	43	33	30	34	26	19	17	27
Sikkim	**14**	**15**	**8**	**15**	**6**	**8**	**8**	**11**
Arunachal Pradesh	22	24	21	27	11	8	10	19
Assam	28	21	25	12	21	14	11	20
Manipur	30	22	28	25	13	10	9	15
Meghalaya	57	17	11	13	20	13	11	19
Mizoram	20	9	13	15	15	7	9	14
Nagaland	20	15	24	31	11	7	10	17
Tripura	15	16	21	21	18	19	13	15

Sources: Statistics of school education- 2010, UDISE+ 2021-22, Ministry of Education

Table 4 illustrates the Pupil-Teacher Ratio (PTR) trends across different educational levels in Sikkim and North-eastern (NE) states from 2010-2011 to 2021-2022. The PTR across the school education in Sikkim for 2021-22 is below 11. It implies Sikkim has the lowest PTR across the level of education i.e. for each teacher, there are only 6, 8,8, and 11 students per teacher in primary, Upper Primary, Secondary, and Higher Secondary schools respectively.

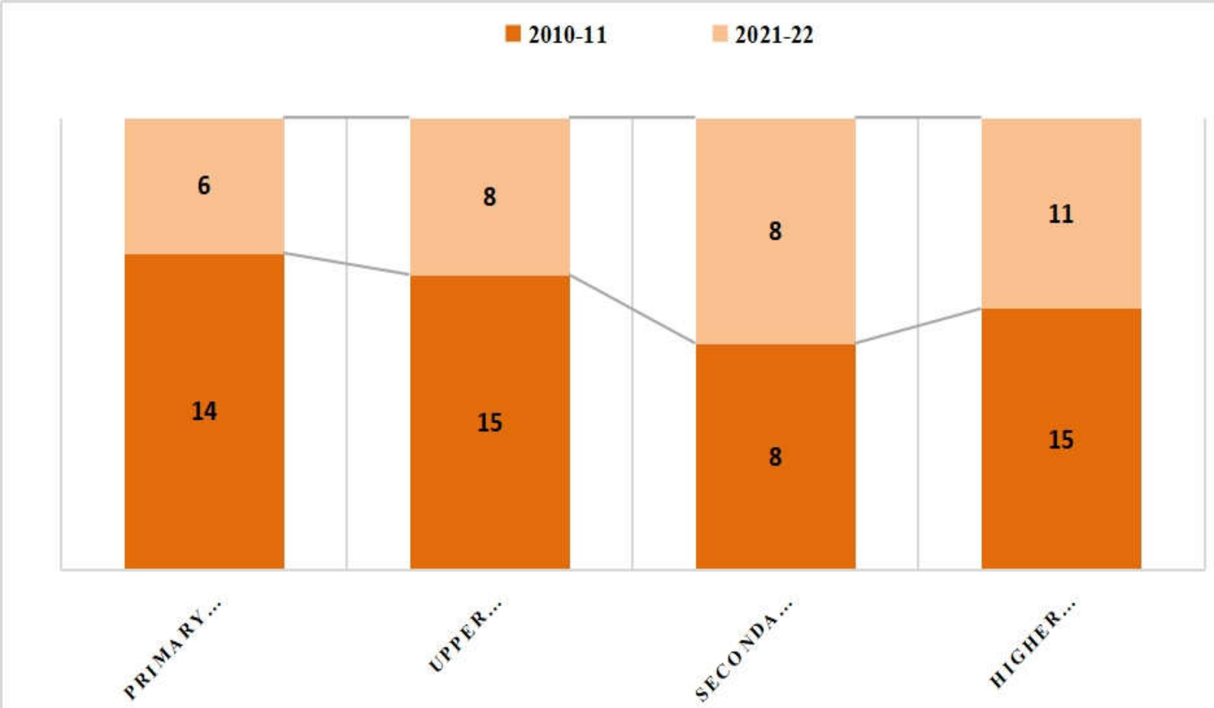

Fig 3: PTR in Sikkim's school in 2010-11 & 2021-22

Sikkim consistently maintains lower PTRs compared to other NE states, indicating better teacher-student interaction and potentially enhanced learning outcomes.

Arunachal Pradesh, Assam, and Manipur have shown improvements in PTRs over the years, especially in primary and upper primary levels. However, Meghalaya exhibits persistently high PTRs, particularly at primary and secondary levels, suggesting challenges in resource allocation and teacher availability.

4.5 School Infrastructure

Schools with various infrastructural facilities play a crucial role in enhancing the educational process for students. Access to amenities like electricity, computers, internet, library, sanitary facilities including toilets and drinking water, provision of mid-day meals, etc. indicates that a school is equipped to provide quality education and support the overall development of its students (Kanwar, 2022). Additionally, the presence of an ample number of teachers in a school further reinforces the availability of these facilities, ensuring a conducive environment for effective learning and holistic growth.

Table- 5: School Infrastructure

States	Schools with functional electricity connection (%)	Schools with functional drinking water facility (%)	Girls' and Co-educational Schools with functional toilet facility (%)	Schools with library facility (%)	Schools with functional computer facility (%)	Schools with internet facilities available (%)
India	83.92	95.17	93.91	85.58	39.88	24.51
Sikkim	**98.34**	**99.68**	**99.16**	**90.18**	**77.67**	**21.14**
Arunachal Pradesh	47.21	64.24	71.72	42.59	25.69	9.52
Assam	57.62	89.61	81.38	84.14	13.73	6.45
Manipur	53.36	96.56	74.16	25.47	32.15	16.48
Meghalaya	22.9	39.22	68.75	14.14	14.34	4.39
Mizoram	80.08	90.27	90.52	81.78	49.96	9.15
Nagaland	68.19	62.38	89.44	55.65	44.35	16.7
Tripura	42.14	73.57	75.54	65.93	20.57	5.55

Source: UDISE+ 2020-21, Ministry of Education

The data presented showcases the state of school infrastructure across various states in India, highlighting disparities in facilities essential for quality education. Sikkim emerges as a frontrunner, boasting high percentages of schools with functional amenities such as electricity (98.34%), drinking water (99.68%), and toilets (99.16%). Additionally, Sikkim exhibits a relatively high provision of library facilities (90.18%) and computer access (77.67%). In contrast, Meghalaya faces considerable challenges, with notably low percentages of schools equipped with necessities like electricity (22.9%), drinking water (39.22%), and toilets (68.75%). The situation is mirrored in Arunachal Pradesh and Assam, albeit with slightly higher access to certain amenities. Mizoram, Nagaland, and Tripura show mixed results, with varying levels of infrastructure provision across different categories. Despite progress in some areas, disparities persist, particularly in access to computer and internet facilities, with nationwide figures remaining relatively low (39.88% and 24.51%, respectively). These discrepancies underscore the need for targeted interventions and investment in infrastructure to ensure all schools can provide conducive environments for effective teaching and learning, ultimately fostering holistic student development.

4.6 Gender Parity Index (GPI)

One essential method for evaluating the equity of access to education for boys and girls is the Gender Parity Index (GPI). By comparing the enrolment ratios of boys and females, it is computed. When the GPI is equal to 1, it indicates that the proportions of boys and girls starting and finishing school are equal. This is known as gender parity. A gender imbalance is shown by a GPI above 1 that favour's girls and a GPI below 1 that favour's boys (Ghosh, 2021). In essence, the GPI shows how big the gender gap in schooling is. Gender disparities in educational opportunities are indicated by deviations from the ratio of 1, which denotes parity (Khare, 2023). Therefore, keeping an eye on the GPI aids in identifying areas that need to be addressed to guarantee equal access to education.

Table 6: Statics of Gender Parity Index (GPI) in Sikkim and other NE States

States	2010-2011				2021-2022			
	Primary	Upper Primary	Secondary	Higher Secondary	Primary	Upper Primary	Secondary	Higher Secondary
India	1.01	0.95	0.88	0.86	1.03	1.00	1.00	1.02
Sikkim	**0.97**	**1.22**	**1.12**	**1.07**	**0.94**	**1.01**	**1.07**	**1.27**
Arunachal Pradesh	0.96	0.95	0.93	0.93	1.01	1.07	1.05	1.09
Assam	1.03	1.02	0.90	0.80	1.06	1.01	1.01	1.11
Manipur	0.96	0.93	0.96	0.82	1.04	1.05	1.04	1.00
Meghalaya	1.01	1.12	1.02	1.03	1.04	1.16	1.24	1.34
Mizoram	0.94	0.94	1.04	0.98	1.00	1.02	1.01	1.05
Nagaland	0.99	1.02	1.08	0.91	1.06	1.01	1.16	1.18
Tripura	0.99	0.99	1.00	0.78	1.04	1.04	1.08	1.15

Sources: Statistics of school education- 2010, UDISE+ 2021-22, Ministry of Education

The Gender Parity Index (GPI) trends from 2010-2011 to 2021-2022 reveal noteworthy observations, particularly in Sikkim. In 2021-2022, Sikkim displays substantial improvements across primary (0.94), upper primary (1.01), and secondary (1.07) levels, with a GPI above 1 indicating slight disparities favoring girls. This suggests enhanced gender parity in education within the state.

Additionally, Meghalaya consistently shows GPI figures above 1, indicating a slight disparity in favor of girls across most levels. Overall, Sikkim's progress highlights successful efforts to achieve gender parity in education, while variations persist across other states.

4.7 Literacy Rate

In 2003, UNESCO defined literacy as the capacity to recognize, comprehend, interpret, generate, communicate, and compute using printed and written materials across various contexts. This definition underscores literacy as a continuous process of learning, empowering individuals to realize their aspirations, foster knowledge and abilities, and actively participate in their communities and society at large. (UNESCO, 2013). A fundamental human right, literacy not only provides a means of emancipation but also acts as a catalyst for social change (Shah, 2022). In acknowledgment of its significance, the Government of India has implemented various policies and programs aimed at eradicating illiteracy across the country.

Table 7: State-wise Literacy Rates in North East India: A Comparison between 2001 and 2011 Census

State	Literacy rate, 2001			Literacy rate, 2011			Projected Literacy Rate 2021
	Total	Male	Female	Total	Male	Female	
India	64.83	75.26	53.67	74.04	82.14	65.46	77.70
Sikkim	68.80	76.00	64.40	81.40	86.60	75.60	82.20
Arunachal Pradesh	**54.30**	63.80	43.50	**65.40**	72.60	57.70	66.95
Assam	63.30	71.30	54.60	72.20	77.80	66.30	85.90
Manipur	70.50	80.30	60.50	76.94	83.58	70.26	79.85
Meghalaya	62.6	65.4	59.6	74.40	76	72.90	75.48
Mizoram	**88.8**	90.7	86.7	**91.30**	93.30	89.30	91.58
Nagaland	66.6	71.2	61.5	79.60	82.80	76.10	80.11
Tripura	73.2	81	64.9	87.20	91.50	82.70	87.75

Source: Census of India (Censusindia, 2011) &*Survey by National Statistical Office (MOSPI)* (MOSPI) (NFHS-5, 2021) *for UTs & NE States based on 2011 Census*

Table 7 compares state-wise literacy rates in North East India according to the 2001 and 2011 Census, alongside projected rates for 2021.

Notably, Sikkim demonstrates significant advancements, outperforming many North East (NE) states and India as a whole. In 2011, Sikkim's total literacy rate surged to 81.40% from 68.80% in 2001, surpassing both the NE region's average and India's national average. The gender gap also narrowed significantly, with female literacy climbing from 64.40% to 75.60% during the same period, indicating strides towards gender equality in education.

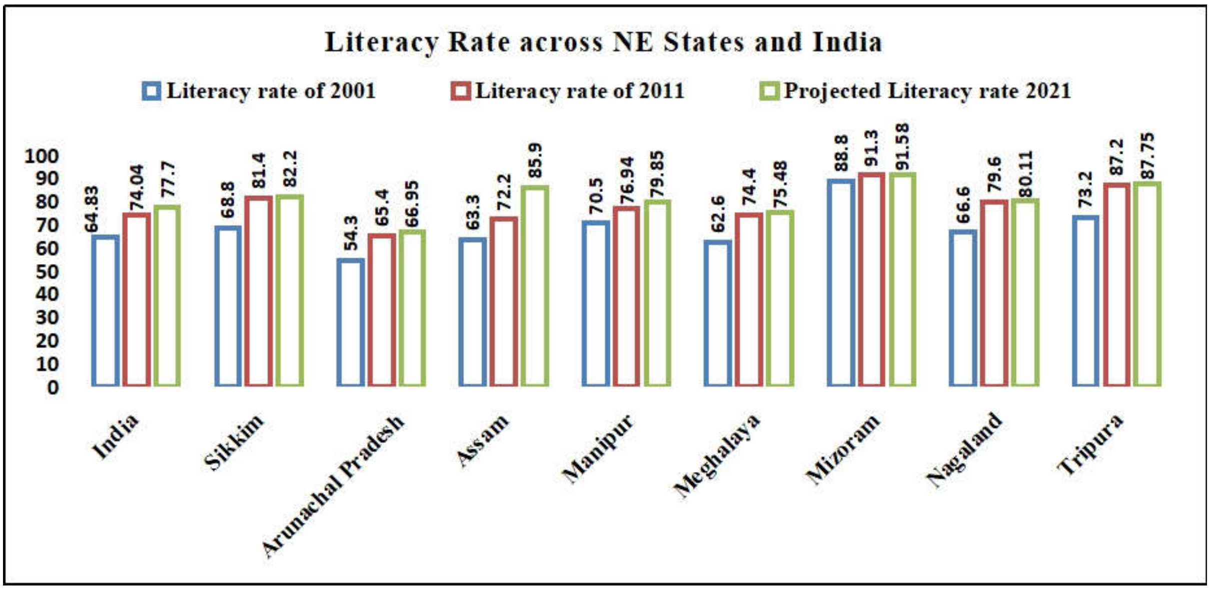

Fig 4: Literacy Rate across NE States and India

In contrast, while other NE states also show improvements, they generally lag Sikkim. For instance, Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, and Tripura exhibit lower literacy rates compared to Sikkim in both 2001 and 2011. Mizoram, known for its high literacy rates, comes close to Sikkim's performance. The projected literacy rate for Sikkim in 2021 anticipates further progress, emphasizing the state's commitment to achieving higher literacy standards and inclusive development. In 2011, the literacy rate in NE states of India stood at 73.17 percent, slightly below the national average of 74.04 percent.

4.8 Other Performance Indicators on Quality School Education in Sikkim

The UDISE+ data (UDISE+, Unified District Information System for Education Plus (UDISE+), 2021-22) for the year 2021-22 encompassed supplementary details on noteworthy key performance indicators. A key performance indicator (KPI) is a performance measurement tool that evaluates the effectiveness of schools, management, teachers, and peers. It aids in assessing progress and determining if strategies align with desired objectives (Pelayo, 2022).

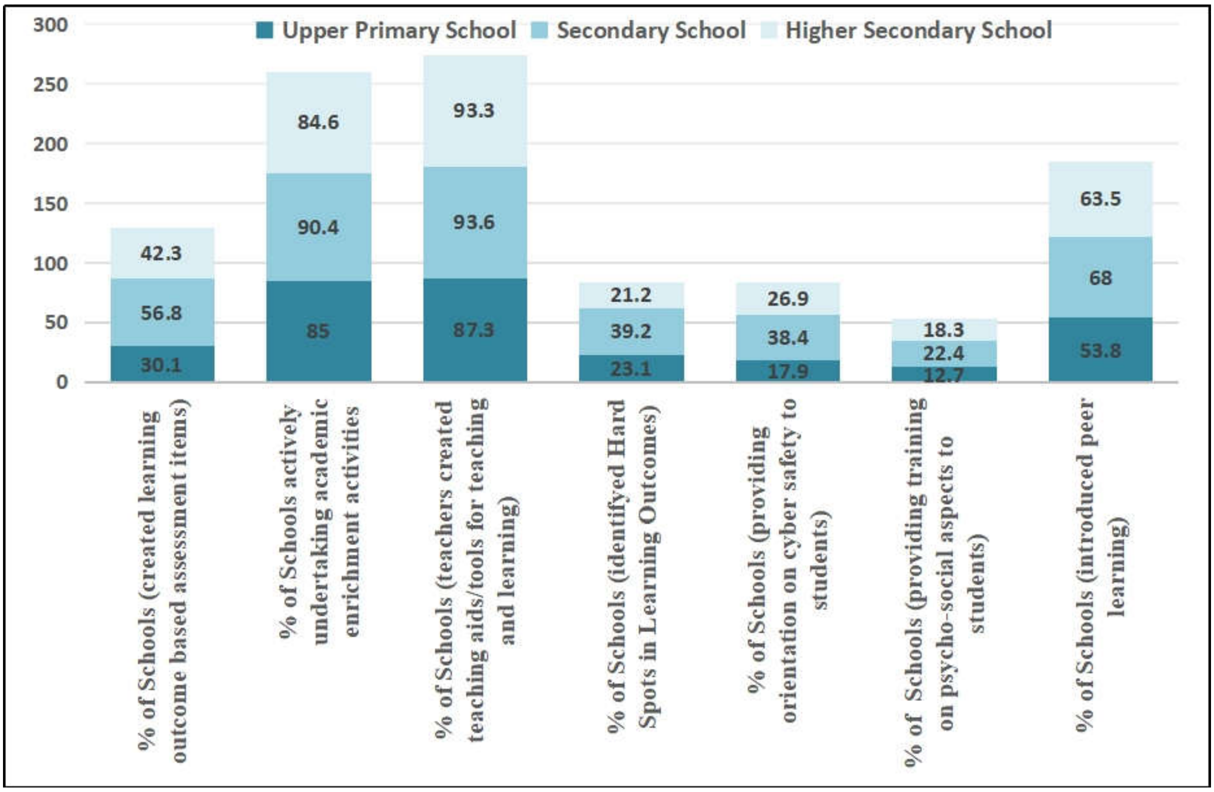

Fig 5: Some of the Performance Indicators on Quality School Education in Sikkim

As per the data of 2021-22, Sikkim's schools exemplify a robust alignment with government policies and educational schemes through various key indicators. Notably, a substantial proportion of schools actively implement learning outcome-based assessment items, with 30.1% (upper primary), 56.8% (secondary), and 42.3% (higher secondary) of institutions emphasizing outcome-oriented learning. Additionally, a significant percentage of schools engage in academic enrichment activities, with 85% (upper primary), 90.4% (secondary), and 84.6% (higher secondary) fostering comprehensive learning experiences. Sikkim's teachers play a pivotal role, with 87.3% (upper primary), 93.6% (secondary), and 93.3% (higher secondary) creating teaching aids/tools, and showcasing innovative pedagogical practices. Efforts to tackle learning challenges are noticeable, with 23.1% of upper primary schools, 39.2% of secondary schools, and 21.2% of higher secondary schools identifying areas of difficulty in learning outcomes.

Furthermore, the state prioritizes student well-being, with percentages of 17.9% (upper primary), 38.4% (secondary), and 26.9% (higher secondary) providing orientation on cyber safety and psycho-social training. Peer learning initiatives are also prevalent, with 53.8% (upper primary), 68% (secondary), and 63.5% (higher secondary) of schools fostering collaborative learning environments. These indicators collectively underscore Sikkim's commitment to quality education and holistic student development, reflecting a proactive integration of government policies and educational initiatives into school practices.

4.9 Tertiary Education

Tertiary education plays a pivotal role in a country's development, offering significant potential gains (Gokarna, V. et.al, 2022). In India, it encompasses colleges and universities providing education across various domains - general, vocational, professional, and technical. Typically established by legislative acts, universities oversee affiliated colleges. India is recognized for having the world's third-largest higher education system, following China and the United States, with projections suggesting its potential as a significant education hub.

Since independence, India's higher education sector has experienced remarkable growth, illustrating its evolving landscape and escalating significance on the global stage (Sheikh, R. et.al, 2022). Tertiary educational establishments, comprising universities, standalone institutes, and colleges both government-aided and private are considered for representation in this study.

Table 8: Tertiary Educational establishments in Sikkim and NE states of India

States	Year	Total Higher Educational Establishments (Universities/Standalone Institutes/Colleges)	Government Aided	Private
India	2010-2011	17120	4860	12260

	2021-2022	43993	9888	34105
Sikkim	**2010-2011**	**15**	**7**	**8**
	2021-2022	**29**	**19**	**10**
Arunachal Pradesh	2010-2011	12	9	3
	2021-2022	53	27	26
Assam	2010-2011	181	150	31
	2021-2022	583	468	115
Manipur	2010-2011	22	15	7
	2021-2022	113	66	47
Meghalaya	2010-2011	33	9	24
	2021-2022	79	31	48
Mizoram	2010-2011	31	28	3
	2021-2022	43	33	10
Nagaland	2010-2011	56	22	34
	2021-2022	74	23	51
Tripura	2010-2011	38	32	6
	2021-2022	59	47	12

Sources: *State Report Card-2010-11, AISHE-2010-11, AISHE 2015-16, AISHE 2021-22, published by Ministry of Education*

Sikkim's progression in tertiary educational establishments stands out when compared to other states in the Northeastern region of India. While most states have experienced growth, Sikkim's trajectory is particularly noteworthy. In 2010-2011, Sikkim had 15 institutions, out of which 7 are run by the government and 8 are manged by the private body. By 2021-2022, Sikkim's tally increased to 29, outstripping the growth rates of other states. Sikkim's private sector growth from 8 to 10 institutions showcases its dynamic education landscape. This contrasts with states like Manipur and Meghalaya, which witnessed more modest growth. Sikkim's proactive approach to bolstering tertiary education, especially in the private sector, distinguishes it as a regional educational leader, fostering accessibility and fostering educational excellence.

Table 9: Enrolment Trends by Higher Education Level in North-East India

States	Year	PhD	Postgraduate	Undergraduate	PG Diploma	Diploma
India	2010-2011	77844	3269669	21972260	139940	1813353
	2021-2022	212568	5217753	34139233	234783	2916445
Sikkim	2010-2011	00	4941	12953	17	904
	2021-2022	652	5986	24806	29	1771
Arunachal Pradesh	2010-2011	1051	4646	33401	87	7689
	2021-2022	681	12696	46295	253	2595
Assam	2010-2011	1807	33332	457914	2595	5050
	2021-2022	5370	62964	579406	1521	22263
Manipur	2010-2011	862	5603	116613	153	218
	2021-2022	1448	10468	112557	974	4649
Meghalaya	2010-2011	766	4638	56867	185	1714
	2021-2022	789	14105	77443	643	3001
Mizoram	2010-2011	555	3341	24627	75	1705
	2021-2022	1199	5608	33154	55	6730
Nagaland	2010-2011	167	10475	44001	279	1422
	2021-2022	620	8454	39214	129	2202
Tripura	2010-2011	111	14161	45913	231	3434
	2021-2022	459	11049	82163	135	4706

Sources: *State Report Card-2010-11, AISHE-2010-11, AISHE 2015-16, AISHE 2021-22, published by Ministry of Education*

In the higher education landscape of Northeast India, Sikkim exhibits a notable increase in enrolment across various levels from 2010-2011 to 2021-2022. Particularly, Sikkim saw a substantial rise in Ph.D. enrolments from 0 to 652, and in Post Graduate enrolments from 4941 to 5986. This signifies the state's focus on academic advancement and research. However, Sikkim's undergraduate enrolment, although increased, remains comparatively lower. In contrast, states like

Mizoram and Assam have shown significant growth across all levels of education, indicating a robust educational infrastructure. To further enhance Sikkim's higher education landscape, initiatives promoting undergraduate studies could be emphasized, potentially through collaborations with established universities and colleges, fostering academic partnerships, and enhancing infrastructure and faculty development programs.

Literature also indicates low higher education enrolment in Sikkim compared to school education, reflecting challenges in transitioning from secondary to higher education. Socioeconomic limitations and limited institutional access may contribute, calling for efforts to enhance accessibility and address cultural and infrastructural barriers for increased enrolment. The literature highlights a lower enrolment.

5. Discussion

The educational landscape of Sikkim presents a blend of remarkable progress and persistent challenges, as revealed by this study. Sikkim's literacy rate witnessed a significant rise from 68.8% in 2001 to 81.4% in 2011, surpassing the national average of 74.04% during the same period. The state demonstrates a notable Gender Parity Index (GPI), achieving a value of 1.07 at the secondary level in 2021-2022, reflecting strides in bridging gender gaps in education. However, disparities across Northeast India remain, with Meghalaya showing a GPI of 1.34 for higher secondary but lagging in other metrics. In terms of infrastructure, Sikkim leads with 98.34% of schools having functional electricity and 99.68% access to drinking water, significantly higher than the national averages of 83.92% and 95.17%, respectively. Despite this, only 21.14% of schools in Sikkim have internet facilities, indicating a digital divide that needs addressing.

Student enrolment trends reveal growth from 126,542 in 2010-2011 to 135,963 in 2021-2022, driven by government schools, though private school enrolment also saw an increase. The dropout rate has drastically reduced to 1.8% at the primary level and 11.9% at secondary in 2021-2022, a commendable improvement from 18.4% and 69.9% in 2010-2011.

While Sikkim's lower pupil-teacher ratio (6:1 in primary education) facilitates better student-teacher interaction, the state must enhance digital infrastructure and promote transitions to tertiary education to achieve holistic educational development. These measures will align the state's efforts with Sustainable Development Goal 4 (SDG-4).

6. Conclusion

Despite significant strides, Sikkim's education system requires substantial improvement. While literacy rates rose from 68.8% in 2001 to 81.4% in 2011, and the government allocated 16.4% of its budget to education in 2023-24, surpassing the national average of 14.8%, challenges persist (Education, 2018-19 to 2020-21). Data shows government expenditure on education as a percentage of GDP fluctuated, declining to 2.90% by 2022 after reaching 4.30% in 2020. Implementation loopholes, including corruption, hinder program success. Notwithstanding economic challenges, Sikkim's projected GSDP for 2023-24 reflects significant growth of 17.1%, indicating potential for increased investment in education. Urgent action is needed to establish minimum school standards and enhance IT infrastructure in government schools, vital for competitiveness amidst the E-learning revolution. Addressing these issues will ensure equitable access to quality education. To fully realize educational potential, sustained investment, and targeted reforms are essential. By prioritizing transparency, combating corruption, and maintaining consistent investment levels, Sikkim can overcome challenges and provide its residents with the education necessary for individual and collective prosperity.

Statements and Declarations

The authors, affirm that this paper constitutes our original work and has not been previously published in any form, including journals, conferences, or websites. There are no ongoing reviews by any editorial office of publishers. All referenced materials have been duly credited through citations within the appropriate contexts and the References section.

Conflicting interests: The authors have declared no conflict of interest.

Declaration of generative AI and AI-assisted technologies in the writing process

The author(s) employed ChatGPT to enhance the language of the manuscript during the development of this work. The content was reviewed and edited by the author(s) as necessary after utilising this service, and the author(s) assume full responsibility for the content of the publication.

Funding: None.

References

Ahmad, S. (2013). State of primary education: regional experience for northeast India. *Journal of North East India Studies, 3(1), 41-60.*

AISHE. (2010-11). *All India Survey on Higher Education.* Department of Higher Education, Ministry of Human Resource Development, Govt. of India.

AISHE. (2020-21). *All India Survey on Higher Education.* Department of Higher Education, Ministry of Education, Government of India.

AISHE. (2021-22). *All India Survey on Higher Education.* Department of Higher Education, Ministry of Education, Govt. of India.

Aithal, P. S. (2019). Analysis of higher education in Indian National education policy proposal 2019 and its implementation challenges. *International Journal of Applied Engineering and Management Letters (IJAEML), 3(2), 1-35.*

Awaah, F. O. (2021). Developing public administration education by focusing on difficult key concepts: the case of Nigeria and Ghana. *Social Sciences & Humanities Open, 4(1), 100136.*

Barra, C. &. (2019). The determinants of students' achievement: a difference between OECD and not OECD countries. Retrieved from Barra, C., & Boccia, M. (2019). *The determinants of students' achievement: a difference between OECD and not OECD countries.*

Bhatia, K. &. (2011). A demand of value based higher education system in India: A comparative study. *Journal of public Administration and policy Research, 3(5), 156.*

Bhutia, Y. (2012). *Higher Education: Status and Problems in Sikkim.* APH Publishing.

Censusindia. (2011). https://censusindia.gov.in: https://censusindia.gov.in/census.website/

Chakrabarti, R. P. (2018). Analysis of education interventions in Andhra Pradesh. *India Consensus, 60.*

Dayal, S. (2023). Online education and its effect on teachers during COVID-19—A case study from India. *Plos one, 18(3), e0282287.*

Dewan, D. B. (2012). Education in Sikkim:An historical retrospect. *Kalimpong: Tender*.

Education, B. E. (2018-19 to 2020-21). /www.education.gov.in: https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/budget_exp.pdf

Gautam M., et al. (2016). Education System in Modern India. *International Journal of Scientific Research and Education. 2016; 4(1):4876-487. doi: http://dx.doi.org/10.18535/ijsre/v4i01.16.*

Ghosh, S. &. (2021). Women's Participation in Higher Education in India: An Analysis Across Major States. . *Indian Journal of Human Development, 15(2), 275-294.*

Gokarna, V. et.al. (2022). Exploring the antecedents of institutional effectiveness: a case study of higher education universities in India. . *Economic research-Ekonomskaistraživa*.

Gulia, D. S. (2021). A Comparativestudy On Present Education System In Haryana And Its Neighbouring States. . *The journal of contemporary issues in business and government, 27(3), 1109-1114.*

Gupta, B. &. (2019). Contemporary issues and challenges in the Indian education system. *International Journal of Engineering and Management Research, 9(1), 190-194.*

HRDD Sikkim. (n.d.). *HrddSikkim.* https://sikkimhrdd.org: https://sikkimhrdd.org/

Indian Era. (2020). *National Education Policy2020: Overview, Reforms and Objectives:* https://www.indianera.com/editors-pick/national-education-policy-nep2020-overview-reforms-objectives/

Jana, A. K. (2013). Spatial Variations in the levels of development in Sikkim. *(Doctoral dissertation, University of North Bengal).*

Kaleem, S. (2022). India's Education System: Issues and Challenges.

Kalyani, P. (2020). An empirical study on NEP 2020 [National Education Policy] with special reference to the future of Indian education system and its effects on the Stakeholders. *Journal of Management Engineering and Information Technology, 7(5), 1-17.*

Kanwar, A. &. (2022). Student satisfaction survey: A key for quality improvement in the higher education institution. *Journal of innovation and entrepreneurship, 11(1), 27.*

Khare, M. (2023). Gendered Concerns of Improved Female Participation in Indian Higher Education. *In Oxford Research Encyclopedia of Education.*

Majid, I. (2024). Indian higher education from the lens of national policy of education (1986) and national policy on education (2016): a comparative study. . *Authorea Preprints.*

MOSPI. (n.d.). www.mospi.gov.in: https://www.mospi.gov.in/national-sample-survey-officensso#

Nayak, P. (2013). Human development in northeastern region of India: issues and challenges. *National Seminar on 'Poverty and Human Development: Issues and Challenges'.* Dept. of Economics, Doomdooma College, Assam.

Negi, S. (n.d.). Educational Progress in Sikkim within the North Eastern Landscape.

NFHS-5. (2021). https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf

Nigam, D. et.al. (2020). Review of the expansion of higher education in India: Cardinal concerns in the traverse. *Journal of Critical reviews, 7(2), 97-102.*

Pelayo, R. C. (2022). Assessing the relevance and adequacy of the performance indicators to the school strategic goals and evaluation report in A K-12 School. *Academy of Educational Leadership Journal, 25.*

Samagrashiksha. (2018). https://samagra.education.gov.in/update.html

SES. (2010-11). Retrieved from www.education.gov.in: https://www.education.gov.in/sites/upload_files/mhrd/files/statistics-new/SES-School_2010-11.pdf

Shah, M. (2022). A Correlational Study Between Sex Ratio and Literacy Rate Matrix in India: A Case Study of Jammu and Kashmir State. *ARPHA Preprints, 3, e81572.*

Sharma, R. &. (2009). The elementary education system in India: Exploring institutional structures, processes and dynamics. *Routledge.*

Shaturaev, J. (2021). A Comparative Analysis of Public Education System of Indonesia and Uzbekistan. *Bioscience Biotechnology Research Communications, 14(5), 89-92.*

Sheikh, R. et.al. (2022). Strategic value realization framework from learning analytics: a practical approach. *Journal of Applied Research in Higher Education, 14(2), 693-713.*

SikkimGovt. (2016) https://www.sikkimtourism.gov.in/Public/ExperienceSikkim/History.

Singh, M. et.al. (2023). Comparative analysis of education policies: A study on analyzing the evolutionary changes and technical advancement in the education system. *Education and Information Technologies, 28(6)*.

Sridevi, K. V. (2019). Trends in school dropout rate in India. *Researchers' Guild, 2(1), 2-24.*

STATE_REPORT-CARDS. (2010-11). http://udise.in/Downloads/Publications/Publications%202010-11/SRC%202010-11/STATE_REPORT-CARDS_2010--11.pdf

Subba, J. R. (2008). History, culture and customs of Sikkim. . *Gyan Publishing House.*

Thapa, S. &. (2020). *Gender and Exclusion: A Retrospective Analysis of the School Education Scenario in Sikkim.*

UDISE+. (2020-21). *Unified District Information System for Education Plus (UDISE+).* Department of School Education, Ministry of Education, Government of India.

UDISE+. (2021-22). *Unified District Information System for Education Plus (UDISE+).* Department of School Education, Ministry of Education, Government of India.

UNESCO. (1960). *Convention against Discrimination in Education. General Conference 11th Session, Paris.* www.unesco.org: http://www.unesco.org/education/pdf/Discri_E.PDF.

UNESCO. (2013). Second Global Report on Adult Learning and Education: Rethinking Literacy. http://unesdoc.unesco.org/images/0022/002224/222407 e.pdf.

Vijayakumari, S. &. (2017). Comparision of Education System in India and Other Countries. *International Journal of Knowledge Based Computer Systems, 5(2).*

Vishwakarma, P. &. (2023). Digitalisation of Education with NEP-2020 and its Impact on Quality of Life.