



Formation of human capital in Assam with special reference to education

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Abstract

Human capital is one of the valuable resources of a country. Without developing human capital a country cannot run well. By Investing in human capital a country can increase people's productivity capacity and increase the prospect of their employment which in turn raises economic growth. One of the strong pillars of human capital formation is education. A country can develop human capital with the help of education. A country can upgrade the productivity of the workforce with the help of education which not only contributes towards the growth of the individual but also helps in the development of the society as a whole. This study assesses the relationship of education and formation of human capital with the help of indicator like enrollment of education, educational institution and expenditure of education to GDP. It is observed that Govt. of Assam invested in education at an increasing trend and GDP of Assam is also increasing trend during the study period. It is concluded in the paper that to provide significant contribution in the economy of education system should be of high quality to meet the skill needs of the economy. The study may be relevant for providing guidelines for research and planning for future manpower planning and human capital formation in Assam.

Keywords: human capital, education and formation of human capital

Introduction

Human capital is the sum of knowledge, skills, experience and social qualities. It helps to develop a person's ability to perform his work in a specific manner that helps to produce economic value. When we have invested to develop human capital that is known as formation of human capital. Human capital formation means the development of abilities and skills among the population of the country. The liability of huge size population can be transformed into assets and it is possible only through the formation of human capital.

In the words of Harbison, the human capital formation indicates "the process of acquiring and increasing the number of persons who have the skills, education and experience which are critical for the economic and the political development of the country. Human capital formation is thus associated with investment in man and his development as a creative and productive resource"

The education plays a significant role in formation of human capital as it acts as a catalyst to use physical resources through proper human capital. To run physical resources, we need good human capital. Human capitals are needed to develop and run physical capitals as well as human capitals. Education improves productivity and prosperity of a society. Education enables a person in developing human capital i.e., skill, knowledge, wisdom. Economists like Harbison, Schultz, Kuznets, Kendrick and Denison observed that one of the important reasons for the rapid growth of the American economy is their increasing allocation of outlays on education resulting in significant improvement in the level of human capital formation. To run a country well, we need good human capital and a well infrastructure human capital formation system. Awan (2015) ^[1], the countries which spend more budgets on education have dominant economic growth as compared to those countries who keep less education budget.

Assam is the gateway of northeastern India. Assam the land of blue hills and red river, blessed with abundant supply of natural resources, yet it remains one of the backward states of the nation. The population of Assam forms 2.58 percent of India in 2011. If the state develops the human capital in a proper way, it can be able to utilize their natural resources and be able to represent as a developed state of the nation. One of the ways to develop human capital is investing in education. With the help of education state can develop the human resources as human capital. The literacy rates of Assam have to improve for the sake of economic growth and prosperity.

Review of literature

The literature reviews of various studies have shown the role of education in the economic growth of different countries. The studies analyzed that the income of household is increased while government spending more on education. It emphasized that the education is the biggest tool for the production of human capital. It deals with the capabilities of human capital such as skill, knowledge, health facilities and training.

Ojha V.P. and Pradhan B.K. (1987) ^[12] "Human capital formation and economic growth in India: A CGE Analysis" mentioned that investment in education increases the supply of educated (skilled) labour, which, as a result productivity will be higher than non-educated (unskilled) labour and leads to higher economic growth with lower relative wage for skilled labour. Increase in real public expenditure on secondary and higher education increases the income and corporate tax rates, helps in achieving higher economic growth as well as an improved income distribution, that investment in physical capital is essential for easing the

constraints on productivity growth, and, on the other hand, that investment in human capital plays a crucial role in spreading the benefits of economic growth more evenly across the various sections of the population.

Wilson A.R. and Briscoe G. (2004) “The impact of human capital on economic growth: a review” stated that investment on education has a significant impact on productivity and growth of the households. The paper examined the relationship between education and training with economic growth. The study analyzed the growth models which represented the relationship between GNP and human resource. It is explored in the study how the indirect role of education in reference with the environmental gains, technological and spatial gains to society. It is concluded that investment in training and education had a significant and positive influence on country economic growth.

Dougherty Sean M. and Herd R. (2008) [7] in the paper ‘Improving Human capital formation in India’ stated that the provision of high-quality education and health care to all of the population is considered a core element of public policy in most countries. In India, the government is active in both education and health but the private sector also plays an important role, notably for health, and to a lesser extent in education. At present, the quality and quantity of the outputs from education, and also from public health care, are holding back the process of economic development. It also considers institutional changes that may help to improve the performance of the educational system and so boost human capital formation.

Ali S. *et al* (2012) [2] examined the impact of human capital formation in the economic growth of Pakistan from 1972 to 2011. In the study, education enrollment used as a proxy in the model. It is concluded that some indicators had a

positive and dominant impact on GDP, while others had a negative and significant influence on GDP in Pakistan.

Quddus, M.A. *et al.*, (2010) [13] “Relationship between school education and economic growth in Pakistan” examined the short and long run relationship between economic growth and education in Pakistan from 1970-71 to 2008-09. It is found that there is a direct relationship between education and economic growth in Pakistan for short run and long run. Instability of Macroeconomic because of inflation effect the economic growth for both short run and long run while school education is affected by it in the long run only.

Objective of the study

1. To study the trend of population and literacy rate of Assam during different census period.
2. To study the trend of human capital investment in education in Assam. It has done with the help of the indicators like total number of recognized educational institutions in Assam, enrollment rate and drop-out rate etc.
3. To study the relationship between investment in education and Gross State Domestic Product (GSDP).

Research Methodology

The study is analytical one primarily based on secondary data which is collected from Census report, Analysis of budgeted expenditure in India, Statistical Handbook of Assam. The period of the study covered from 2013 to 2019. To examine the relationship between human capital formation and education the study has taken GDP as Dependent variable and while literacy rate, enrollment rate, educational institution, expenditure of education has taken as independent variable. [Ali, S. *et al.*, (2012), Gwan. A (2015)] [2, 1]. Data has been analysed with the help of tabulation and statically presentation like bar diagram, pie-diagram etc.

Analysis

Table 1: Population Trends in Assam

Year	Population				
	Total	Decadal Growth Rate (%)	Male Population	Female Population	Sex Ratio
1901	3289680	-	1714316	1575364	919
1911	3848617	16.99	2010211	1838406	915
1921	4636980	20.48	2445300	2191680	896
1931	5560371	19.91	2966568	2593803	874
1941	6694790	20.40	3569762	3125028	875
1951	8028856	19.93	4298773	3730083	868
1961	10837329	34.98	5798376	5038953	869
1971	14625152	34.95	7714240	6910912	896
1981*	18041248	23.36	9444037	8597211	910
1991	22414322	24.24	11657989	1075633	923
2001	26655528	18.92	13777037	12878491	935
2011	31205576	17.07	15939443	15266133	958
2021**	36617242	10.83	18595339	18021903	

* The 1981 Census could not be conducted in Assam. The population figures for 1981, Assam have been worked out by Interpolation.

Source: Census of India.

** Projected population of 2021.

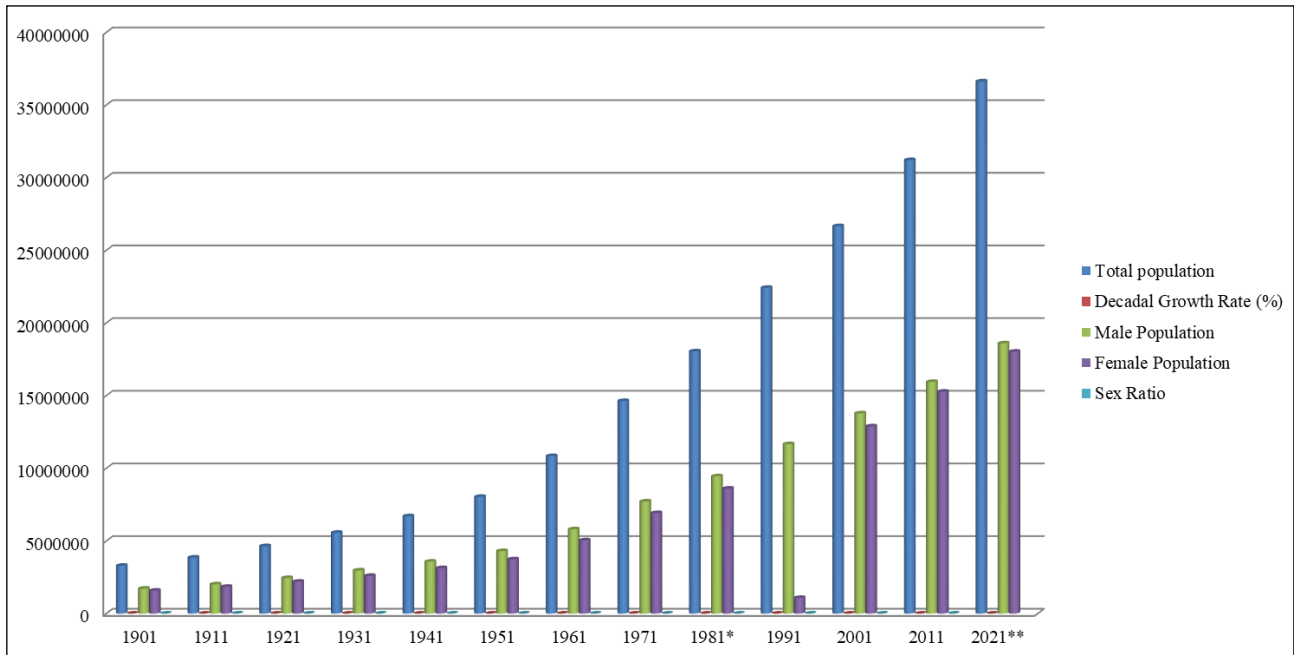


Fig 1: Population in Assam

It is observed from the table that population of Assam has tremendously increased at every census. In the census 1901, the population of Assam is 32,89,680 where as in

2011 census it is 3,12,05,576. So, the state can transform this liability of population into assets by the way of proper human-capital formation i.e. investment in human capital.

Table 2: Literacy Rates in Assam 1951-2021 (in percentage)

Year	Literacy Rate			Male- Female Gap
	Person	Male	Female	
1951	18.53%	28.01%	7.58%	20.43%
1961	32.96%	44.28%	18.68%	25.6%
1971	33.94%	37.7%	18.9%	18.8%
1981*				
1991	52.11%	63.86%	39.42%	24.44%
2001	63.25%	71.28%	54.61%	16.67%
2011	72.19%	77.85%	66.27%	11.58%

* The 1981 Census could not be conducted in Assam. Source: Census of India.

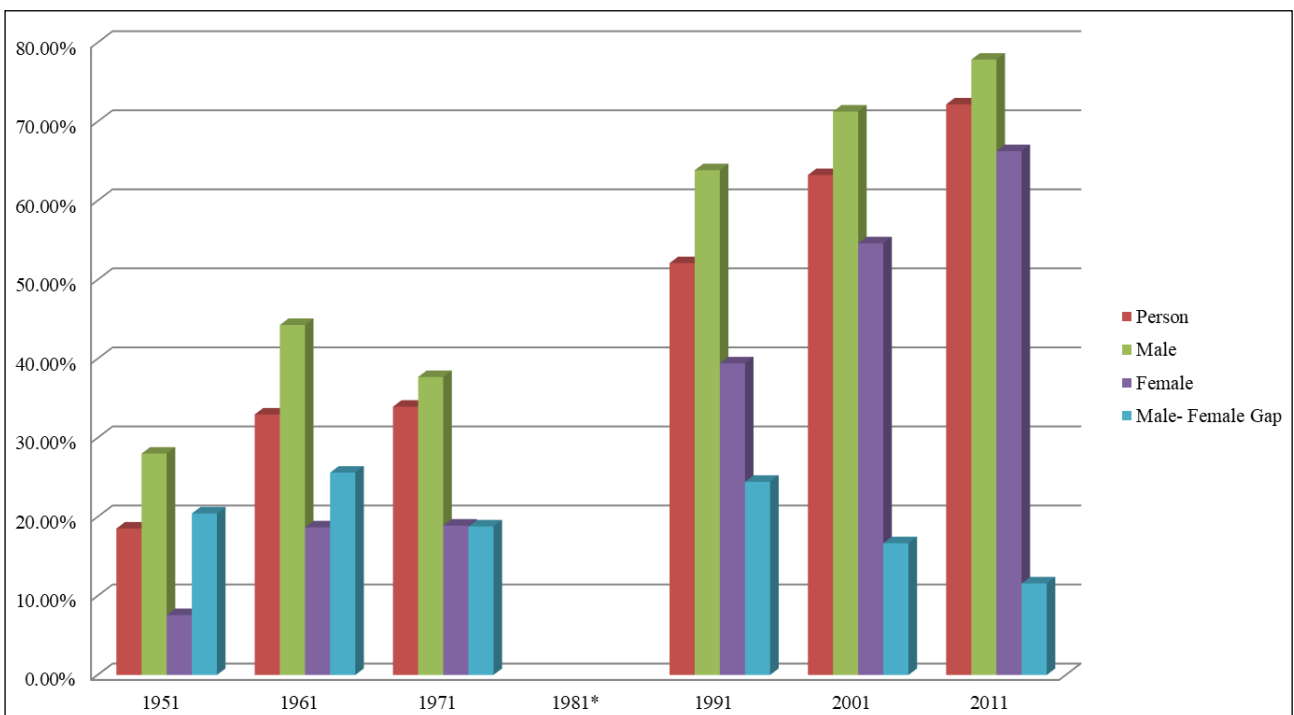


Fig 2: Literacy Rate in Assam

The literacy rates have increased from 18.53% in 1951 to 72.19% in 2011. So, it indicates that Govt. has taken necessary steps to develop the human capital i.e. invested on education. However, a vast difference of literacy rate is

noticed among male and female population. Literacy among males is nearly 25.6% higher than females in 1961 but this gap is reduced in 2011 census and it is stood 11.58%.

Table 3: Literacy Rate in Assam and India, 1951-2011 (in percentage)

Year	Person		Male		Female	
	Assam	India	Assam	India	Assam	India
1951*	18.53	18.33	28.01	27.16	7.58	8.86
1961	32.95	28.30	44.28	40.40	18.62	15.36
1971	33.94	34.45	43.72	45.96	22.76	21.97
1981**	-	43.57	-	56.38	-	29.76
1991	52.89	52.21	61.87	64.13	43.03	39.29
2001	63.25	64.84	71.28	75.26	54.61	53.67
2021	72.19	72.99	77.85	80.89	66.27	64.64

* Excluding Jammu & Kashmir. ** Excluding Assam. Source: Census of India.

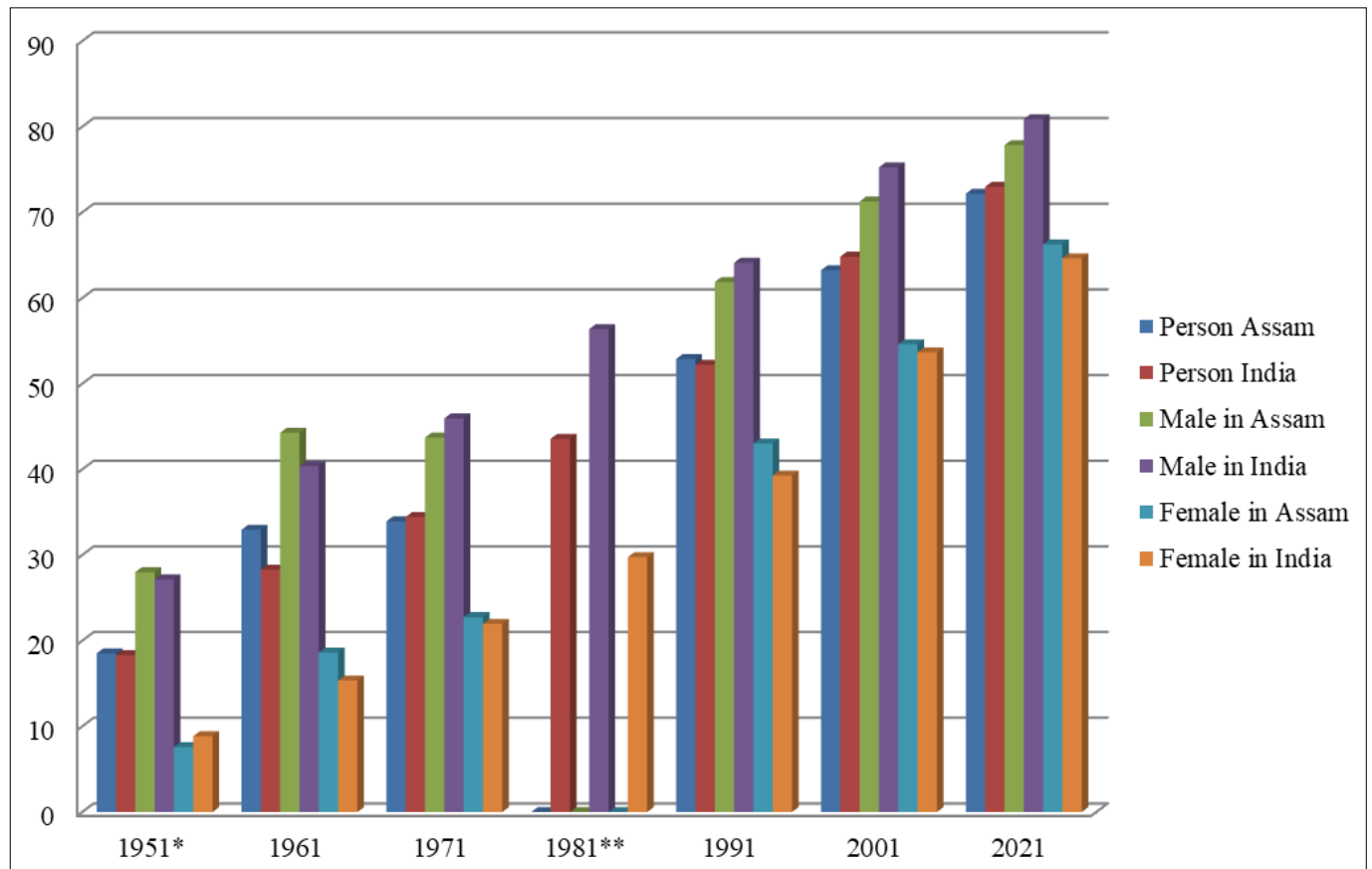


Fig 3: Literacy Rate in India and Assam

From the above table, it is remarkable noticed that there is no vast difference of literacy rate between the India and the state of Assam. It is also observed that in the year of 1951,1961,1971 and 1991 the literacy rate is higher in the

state of Assam than the nation (India). In the year 2021 the literacy between Assam and India is 72.19% and 72.99% respectively.

Table 4: Unemployment rate in India and Assam (in percentage)

	Dec, 2016	Dec, 2017	Dec, 2018	Dec, 2019	Dec, 2020	Dec, 2021
India	6.4	4.7	7.0	7.6	9.1	7.9
Assam	3.9	7.0	6.1	0.9	7.6	5.8

Source: Centre of Monitoring Indian Economy. (<https://unemploymentinindia.cmie.com>)

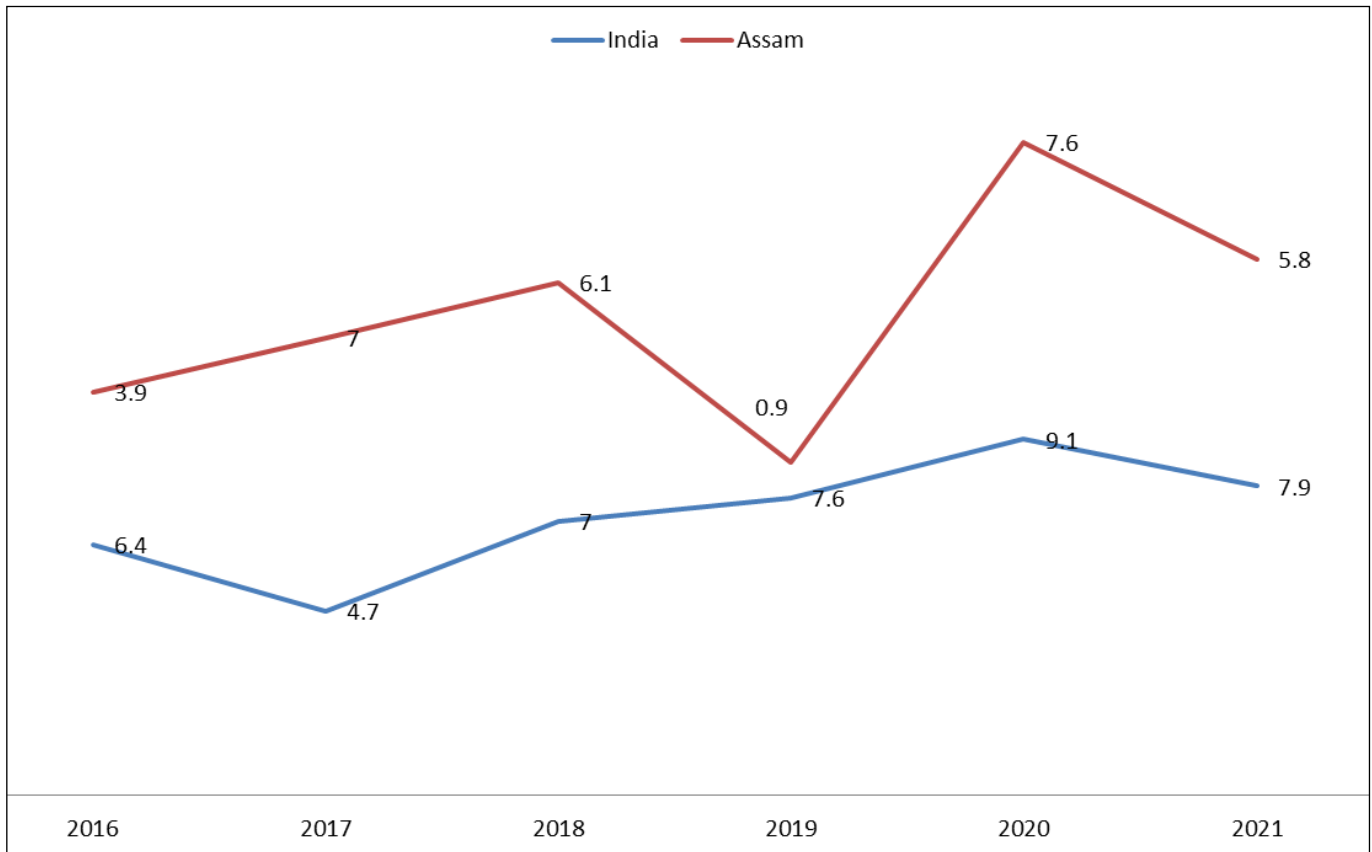


Fig 4: Unemployment rate in India and Assam

It is observed from the table that unemployment rate in Assam is lower than in India. The trend of unemployment rate in Assam is not stable. In 2016 the rate of unemployment in Assam was 3.9 and it is increased by 7.6 in 2020. Education system availed in the state is one of the

reason of increasing unemployment in Assam. The quality of education system should be skill based and developed in such a way to meet the needs of the economy or understand the subject to the core rather than completing the syllabus and scores high marks or grades.

Table 4: Total number of recognized educational institutions in Assam (numbers)

Year	Primary	Upper Primary	High School	Higher Secondary School	Junior Colleges	Colleges general college	Colleges Professional colleges	University/Deemed University/Institutes on national importance
2019	36210	5718	3479	834	251	614	37	18
2018	36262	5732	4309	833	65	401	37	17
2017	39304	6449	3380	4378	65	348	24	14
2016	40465	11741	4314	829	247	348	24	14
2015	40002	7812	6987	1254	657	344	104	12
2014	40444	11460	5743	1080	466	400	117	17
2013	40355	7646	5743	1080	466	343	89	10
2012	35064	5823	5743	1080	466	353	75	10
2011	35541	11423	5460	1192	266	368	75	9
2010	35065	12985	5714	933	217	368	37	8
2009	30054	11036	5506	857	217	338	42	8

Source: Statistical Handbook of Assam 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019.

Table 4 reveals that the growth of educational institutional infrastructure in the state (Assam) has had a very significant progress which contributes in the literacy of the population and formation of knowledge and skill. It is observed that primary, upper primary, high school, Hr. Secondary School and Junior colleges has not increased at regularly. The number of primary schools were 30054 in 2009. Presently it becomes 36210. In the Upper Primary, High School, Higher

Secondary School, professional colleges has shown tremendous growth from 2009 to 2015 but after than it has started to decrease. In 2009 the numbers of junior colleges and general college were 217 and 338 respectively. Presently the junior colleges and general college it increased by 251 and 614 respectively. In 2009 there were only 8 universities which increased and became 18 in 2019.

Table 5: Enrollment Rate of Primary, Upper Primary, High and Higher Secondary School (000 nos)

Year	Primary			Upper Primary			High and Higher Secondary		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2013	1634	1668	3302	754	827	1581	495	530	1025
2014	1574	1610	3184	756	825	1581	495	530	1025
2015	1439	1486	2925	687	766	1453	562	589	1151
2016	1436	1478	2914	710	791	1501	354	668	1022
2017	1214	1281	2495	291	342	633	554	586	1140
2018	1299	1352	2651	702	791	1493	363	421	784
2019	1286	1331	2617	713	805	1518	355	425	780
2020	1307	1343	2650	723	825	1548	726	839	1565

Source: Assam at Glance

Table-5 shows the enrollment numbers in primary, upper primary, high and higher secondary in different period. It is seen that in all cases enrollment numbers are not uniform, it rises and falls. In case of primary level, total enrollment in 2013 is 3302. After then it starts to decrease. It stands 2650 in the year 2020.

In case of upper primary enrollment, it is seen that enrollment is heavily falls down in the year 2017. It is only 633 in 2017. But after then it starts to increase and in the year 2019 it is 1518 and in the year 2020 it is 1548.

In case of high and higher secondary, the enrollment is an increasing trend up to the year 2015, but afterwards it starts to decrease and in the year 2019 it is only 780 from 1151 in the year 2015. Again it is increased up to 1565 in the year 2020.

It is remarkable noticed that enrollment of girls are higher than boys in all the level i.e. primary, upper-primary, high and higher secondary.

Table 6: Drop out ratio (percentage)

Year	Primary	Upper Primary
2013	6.3	7.3
2014	7.4	7.1
2015	15.4	10.5
2016	5.6	3.02
2017	10.08	5.36
2018	3.1	1.9
2019	4.3	1.4

Source: Assam at Glance 2013, 2014, 2015, 2017, 2018, 2019

From the table 6, it is observed that drop out ratio of both primary and upper primary is highest in the year 2015. It is 15.4% in primary and 10.5% in upper primary in 2015. But it is brought down to 4.3% in primary and 1.4% in upper primary in the year 2019. It indicates that importance of education has increased and one of the positive signal for development of human capital.

Government Expenditure on Education

The expenditure incurred by the Government is expressed in two ways (i) as a percentage of 'total government expenditure' (ii) as a percentage of Gross Domestic Product (GDP). The percentage of education expenditure of total government expenditure' indicates the importance of education in the scheme of things before the government. The percentage of 'education expenditure of GDP' expresses how much of our income is being committed to the development of education in the country.

Table 7: Relationship between GSDP and Expenditure on Education (Rs.in crores)

Year	GSDP at current year price	Total State Revenue Expenditure	% OF TOTAL REVENUE EXPENDITURE TO GSDP	Total Expenditure on Education by Education Department	% of Expenditure on Education by Education departments to GSDP
2019	335238.11	79742.26	23.79	17552.85	5.24
2018	309336.32	82004.81	26.51	17081.47	5.52
2017	283164.89	55480.95	19.59	13666.61	4.83
2016	226276.00	62459.04	25.82	12054.69	4.78
2015	226276.00	51562.85	16.2	14024.10	3.93
2014	195723.00	52429.00	26.79	13982.68	7.14
2013	177745.00	31971.81	17.99	9386.09	5.88

Source: Analysis of Budgeted Expenditure in India.

The above table shows the trend of GDP and total state revenue expenditure and total expenditure on education. Throughout this period the increase in education expenditure has not been uniform and there has been irregular rise and fall. However, it is observed that GSDP has increased from 177745 crores (in 2013) to 335238.11

crores in 2019. It is a positive indication of development of human capital in Assam.

Conclusion

Education can play a significant role in formation of human capital in Assam. With the analysis of Literacy rate, number of recognized educational institution, enrolment rate, drop-

out rate and GSDP in Assam has found positive indicator for development of human capital. But the prevailing education system in Assam should be reformed so that the rate of unemployment can be reduced. It should be knowledge based as well as skill based. Although our education system emphasized more on theoretical based but the mere theoretical knowledge is not sufficient to cope up with the present real world. The quality of education system should be high so that we can develop human capital according to the needs of economy.

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