

Disparity in Literacy amongst States of India

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Abstract: We have been consistently focusing on parity between both the sexes regarding literacy levels. However, in reality noticeable disparities are observed between male – female literacy rates. The present study focuses on empirical analysis of male-female disparity in literacy across and within the states of India and Union Territories. The overall literacy rate of India is 74.04% whereas that of males is 82.14% and of females, it is 65.46% as per Census, 2011. The male-female disparity is seen more in rural areas than in urban areas. The gender disparity index of literacy shows much higher degree of disparity in rural areas which is more than national average disparity. There are variations in urban areas also but it is quite less according to computed standard deviation. Literacy is the basic building block and a critical element in the development of education in society. Therefore, the education policy of government should focus on female literacy particularly in rural areas. Because when you educate a woman; you educate a generation.

Keywords: Male-Female Disparity, Census, Female Literacy, Male Literacy, Gender Disparity Index

Introduction

Literacy is regarded as an important indicator of socio-economic and cultural progress. Being an imperative for development in society a multitude of existing challenges like unemployment, poverty and persisting social evils can be tackled by encouraging literacy in the first place. In today's dynamically changing world education is an indispensable prerequisite for women and men alike. Thus the focus of human resource development across countries is centred on strengthening the education scenario within their respective spheres of influence. Be it civilised society or productive workforce, all can only be aimed by first targeting to improve the education which in turn starts by encouraging literacy in the first place. India has made a significant progress in its literacy rates from 18.33% in 1951 to 74.04% in 2011 (Census of India, 2011) yet despite this progress, there is a lot more to achieve to achieve universal literacy especially at primary level of education as envisioned under the Millennium Development Goals that unfortunately couldn't be achieved within stipulated time frame and were furthered under Sustainable Development Goals that are to be accomplished by 2030.

Literacy is the most potent component and a critical element in the development of education in society. As is widely argued, "When you educate a man, you educate a person; but when you educate a woman, you educate a generation" it is very important to resolve for a holistic approach towards educating people. Since education exposes people to new thoughts and ideas and paves way for acquiring necessary skills, if half of the population is ignored, development will be skewed and the society will suffer as a whole. Though there is improvement in the level of overall literacy but the gender disparity in literacy is evident. As per the census 2011, the literacy rate for males is 82.14% though it is 65.46% for women. And as women constitute half of the human resource they should be rightly recognised as an agent of socio-economic change and development of the country. Educated women are empowered to assume a greater socio-economic role in their families and communities & they tend to reinvest majority of what they earn into their families. In vast literature it is found that as female education rate improves, rates of fertility, population growth, and infant and child mortality fall and indicators of family health, life expectancy, GDP, employment, gross enrolment ratio etc. rise. Educated women are more politically active and better informed about their legal rights and know how to exercise them. But in India this is yet to become a reality. Little has been achieved in the area of women empowerment, as for this to happen, this sector must experience a chain of reforms. Though India shows the potential to be the largest economy in the world, this idea is hindered by the lack of women's ample participation. Taking a leaf from Gandhian model of education, the need to implement literacy programmes was emphasised as a key component of an integrated rural development programme with special emphasis on vocational skill development and income generation programmes as literacy is associated with both societal needs and economic development (Das & Singh, 2002). Literacy influences and determines the human resource not only qualitatively and quantitatively but also by desirably impacting other demographic attributes like fertility, mortality, age of marriage and economic participation of a population, ultimately aiming towards welfare of the society. (Sawant and Lewis, 2004).

1. Objectives:

1. To analyse the nature of spatial variations in the level of literacy in India.
2. To estimate disparities in male-female literacy rates at the state level and rural- urban levels.
3. To suggest suitable policy measures for reducing disparities in literacy to achieve social and economic development of the economy.

2. Data source and Methodology:

The present study is based on secondary data. The database for the study is Census of India, 2011. The sample size is 35 which include both States as well as Union territories. In this study, Sopher's Disparity Index (1974) modified by Kundu and Rao (1983) has been used to calculate male-female disparity in literacy –

$$D = \log(x_2/x_1) + \log(100 - x_1) / (100 - x_2) \quad (i)$$

Kundu and Rao's modified disparity index formula, as follows:

$$D = \log(x_2/x_1) + \log(200 - x_1) / (200 - x_2) \quad (ii)$$

Where x_2 is for male literacy rate and x_1 is for female literacy rate.

Standard Deviation using SPSS is calculated to see the variation in the disparity index of literacy in rural and urban area.

3. Analysis:

According to Census 2011, the literacy rate of India is 72.99% and that of male and female is 80.89% and 64.64% respectively. It shows clear cut disparity in literacy rate of 16.25% on the basis of gender. However if the data is analysed further, it is revealed that the rural and urban areas vary from each other in terms of literacy rate. There is 16.34% of rural-urban disparity in literacy rate as this rate is quite high in urban areas i.e. 84.11% as compared to rural areas where it is 67.77%. Though, the variation in the literacy rate can be seen within rural and urban areas in respect of gender. The male-female disparity in rural areas is 19.17% and 9.65% in urban areas. In both rural and urban areas the male literacy rate is considerably higher as 77.1% in rural area and 88.76% in urban areas. The female literacy rate is high in urban areas in comparison to rural areas and the disparity is of 21.18% in female literacy rate in rural-urban areas.

In male-female disparity index of literacy, the zero value of D represents no disparity at all. The higher the value of D , greater is the extent of disparity and lesser the value of D , lower the disparity. This index measures the relative disparity. The extent of variations in male –female literacy rate in rural and urban area is measured through this index

Table I: Literacy Rates (%) in India as per Census 2011

	Male	Female	Total	Male-Female literacy Disparity Index
India	80.89	64.64	72.99	0.115289
Rural	77.15	57.93	67.77	0.141954
Urban	88.76	79.11	84.11	0.068706

Source: Census of India - 2011

The male-female disparity in literacy has been computed by Sopher's Disparity Index. The male-female disparity in literacy of India is 0.115289 whereas in rural areas it is 0.141954 and in urban areas it is 0.068706. The estimate presents that male-female disparity in literacy is higher in rural areas as compared to urban areas.

Table II: Comparison of States Having Highest and Lowest Literacy Rates

	Overall Literacy Rate			Rural Literacy Rate			Urban Literacy Rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Highest	Kerala	Kerala	Kerala	Kerala	Kerala	Kerala	Mizoram	Mizoram	Mizoram
Lowest	Bihar	Bihar	Bihar	Bihar	Arunachal Pradesh	Rajasthan	Uttar Pradesh	Uttar Pradesh	Jammu and Kashmir

Source: Census of India - 2011

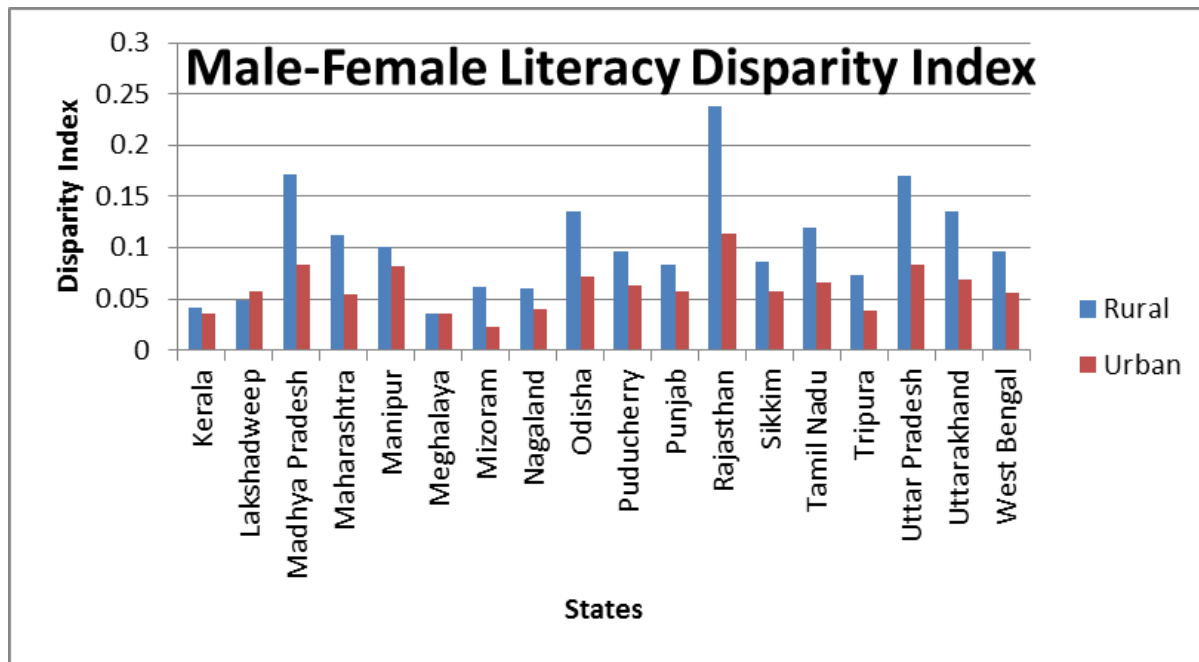
The table II shows that Kerala is at top rank in overall and rural literacy rate whereas Bihar has lowest literacy rates in both the dimensions. In case of urban literacy rate, Mizoram is having highest percentage of persons as literates. On the other hand, Uttar

Pradesh has the lowest percentage of urban literates. In respect of female literacy, Kerala has highest rank overall as well as in rural areas and Mizoram in urban area although the states having lowest rank in this dimension are Bihar in overall, Rajasthan in rural and Jammu and Kashmir in urban areas. While in male literacy rate, Kerala leads both in overall and rural areas although Mizoram is highest in urban areas whereas states having lowest male literacy rates are Bihar in overall, Arunachal Pradesh in rural and Uttar Pradesh in urban areas.

Table III: State wise Literacy Rates by Residence and Sex in India

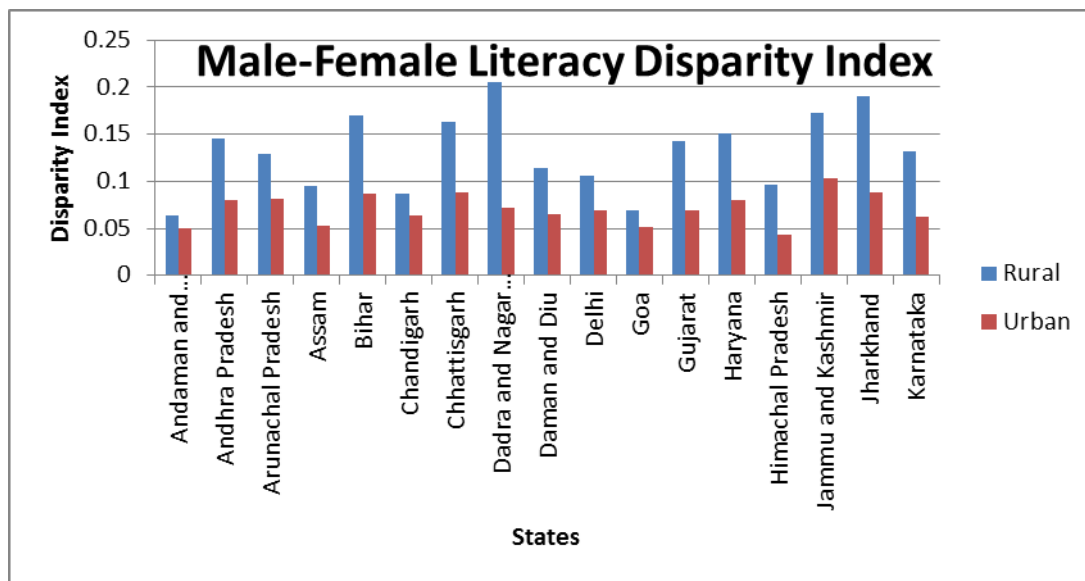
State-wise Literacy Rate by Residence and Sex in India(As per 2011 Census)											
State/UTs	Total			Rural			Urban			Disparity Index	
	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female	Male-Female (Rural)	Male-Female (Urban)
Andaman & Nicobar Islands	86.63	90.3	82.43	84.5	88.53	79.85	90.1	93.11	86.63	0.063473	0.050549
Andhra Pradesh	67.02	74.9	59.15	60.45	69.38	51.54	80.09	85.79	74.35	0.145715	0.080536
Arunachal Pradesh	65.38	72.6	57.7	59.94	67.44	52.04	82.93	88.45	76.66	0.128951	0.080875
Assam	72.19	77.9	66.27	69.34	75.4	63.03	88.47	91.81	84.94	0.094972	0.052827
Bihar	61.8	71.2	51.5	59.78	69.67	49	76.86	82.56	70.49	0.169569	0.086628
Chandigarh	86.05	90	81.19	80.75	85.77	73.17	86.19	90.11	81.38	0.087415	0.06313
Chhattisgarh	70.28	80.3	60.24	65.99	76.98	55.06	84.05	90.58	77.24	0.163109	0.088282
Dadra and Nagar	76.24	85.2	64.32	64.12	76.4	49.58	89.79	93.99	83.38	0.205403	0.071516
Daman and Diu	87.1	91.5	79.55	81.36	89.43	71.93	88.96	92.1	82.88	0.113633	0.064982
Delhi	86.21	90.9	80.76	81.86	89.37	73.1	86.32	90.98	80.95	0.106288	0.069769
Goa	88.7	92.7	84.66	86.65	91.71	81.63	89.95	93.21	86.56	0.069712	0.051386
Gujarat	78.03	85.8	69.68	71.71	81.61	61.36	86.31	90.98	81.03	0.14195	0.069337
Haryana	75.55	84.1	65.94	71.42	81.55	60.02	83.14	88.63	76.9	0.151246	0.080423
Himachal Pradesh	82.8	89.5	75.93	81.85	89.05	74.62	91.1	93.42	88.37	0.09569	0.043349
Jammu and Kashmir	67.16	76.8	56.43	63.18	73.76	51.64	77.12	83.92	69.01	0.172035	0.103193
Jharkhand	66.41	76.8	55.42	61.11	72.86	48.91	82.26	88.44	75.47	0.190232	0.087656
Karnataka	75.36	82.5	68.08	68.73	77.61	59.71	85.78	90.04	81.36	0.131413	0.062888
Kerala	94	96.1	92.07	92.98	95.35	90.81	95.11	96.95	93.44	0.040663	0.035691
Lakshadweep	91.85	95.6	87.95	91.58	94.53	88.5	91.92	95.84	87.79	0.048037	0.057783
Madhya Pradesh	69.32	78.7	59.24	63.94	74.74	52.43	82.85	88.67	76.52	0.171289	0.082789
Maharashtra	82.34	88.4	75.87	77.01	85.15	68.54	88.69	92.12	84.89	0.112689	0.054603
Manipur	79.21	86.1	72.37	76.2	83.39	68.89	85.38	91.68	79.31	0.101118	0.082164
Meghalaya	74.43	76	72.89	69.92	71.46	68.37	90.79	92.46	89.14	0.035685	0.034895
Mizoram	91.33	93.4	89.27	84.1	88.16	79.81	97.63	97.98	97.27	0.061811	0.022877
Nagaland	79.55	82.8	76.11	75.35	78.96	71.51	89.62	91.62	87.4	0.060463	0.039408
Odisha	72.87	81.6	64.01	70.22	79.65	60.74	85.75	90.72	80.42	0.135524	0.071351
Puducherry	85.85	91.3	80.67	80.1	87.44	73.02	88.49	93.03	84.17	0.096958	0.062759
Punjab	75.84	80.4	70.73	71.42	76.62	65.74	83.18	86.67	79.21	0.08376	0.05746
Rajasthan	66.11	79.2	52.12	61.44	76.16	45.8	79.68	87.91	70.73	0.23853	0.113272
Sikkim	81.42	86.6	75.61	78.95	84.62	72.45	88.71	92.35	84.7	0.085685	0.056707
Tamil Nadu	80.09	86.8	73.44	73.54	82.04	65.05	87.04	91.8	82.31	0.118837	0.066528
Tripura	87.22	91.5	82.73	84.9	90.07	79.49	93.47	95.51	91.38	0.073198	0.038682
Uttar Pradesh	67.68	77.3	57.18	65.46	76.33	53.65	75.14	80.45	69.22	0.170635	0.082999
Uttarakhand	78.82	87.4	70.01	76.31	86.62	66.18	84.45	89.05	79.25	0.135647	0.069399
West Bengal	76.26	81.7	70.54	72.13	78.44	65.51	84.78	88.37	80.98	0.095741	0.056521
India	72.99	80.9	64.64	67.77	77.15	57.93	84.11	88.76	79.11	0.141954	0.068706

Figure I(a): Spatial Variations Across Rural-Urban Areas In Male-Female Disparity In Literacy



Source: Author’s calculations

Figure I (b): Spatial Variations Across Rural-Urban Areas In Male-Female Disparity In Literacy



Source: Author’s Calculation

With the estimate of standard deviation of male-female disparity index of literacy it can be said that disparity exists in both rural(0.048798) and urban areas (0.01984). The variation in rural areas is higher than that in urban areas. The degree of variability within rural areas is significantly more as compared to urban areas. It is evident that the highest male-female disparity in literacy is in **Rajasthan** whereas lowest is in **Meghalaya**.

Table IV: Disparity among States Regarding Index of Male-Female Rural Literacy

Below Average	
Meghalaya	0.035685
Kerala	0.040663
Lakshadweep	0.048037
Nagaland	0.060463

Mizoram	0.061811
Andaman and Nicobar Islands	0.063473
Goa	0.069712
Tripura	0.073198
Punjab	0.08376
Sikkim	0.085685
Chandigarh	0.087415
Assam	0.094972
Himachal Pradesh	0.09569
West Bengal	0.095741
Puducherry	0.096958
Manipur	0.101118
Delhi	0.106288
Maharashtra	0.112689
Daman and Diu	0.113633
Tamil Nadu	0.118837
Arunachal Pradesh	0.128951
Karnataka	0.131413
Odisha	0.135524
Uttarakhand	0.135647
Gujarat	0.14195
Above Average	
Andhra Pradesh	0.145715
Haryana	0.151246
Chhattisgarh	0.163109
Bihar	0.169569
Uttar Pradesh	0.170635
Madhya Pradesh	0.171289
Jammu and Kashmir	0.172035
Jharkhand	0.190232
Dadra and Nagar Haveli	0.205403
Rajasthan	0.23853

From the table of male-female disparity index of literacy of urban area, it is revealed that **Rajasthan** has the highest on the other hand **Mizoram** has the lowest male-female disparity in literacy.

Table V: Disparity among States Regarding index of male-female urban literacy

Below Average	
Mizoram	0.022877
Meghalaya	0.034895
Kerala	0.035691
Tripura	0.038682
Nagaland	0.039408
Himachal Pradesh	0.043349
Andaman and Nicobar Islands	0.050549
Goa	0.051386
Assam	0.052827
Maharashtra	0.054603
West Bengal	0.056521
Sikkim	0.056707
Punjab	0.05746
Lakshadweep	0.057783
Puducherry	0.062759
Karnataka	0.062888
Chandigarh	0.06313
Daman and Diu	0.064982
Tamil Nadu	0.066528
Above Average	
Gujarat	0.069337
Uttarakhand	0.069399
Delhi	0.069769
Odisha	0.071351
Dadra and Nagar Haveli	0.071516
Haryana	0.080423
Andhra Pradesh	0.080536
Arunachal Pradesh	0.080875
Manipur	0.082164

Madhya Pradesh	0.082789
Uttar Pradesh	0.082999
Bihar	0.086628
Jharkhand	0.087656
Chhattisgarh	0.088282
Jammu and Kashmir	0.103193
Rajasthan	0.113272

As per the disparity index of male-female literacy, it is revealed that **Rajasthan** has the highest disparity index in rural as well as urban areas as compared to other states. Further within Rajasthan, male-female disparity in literacy is more in rural areas than in urban areas. The female literacy is very low in rural Rajasthan as not even half of the total female population is literate. The position of females is very miserable in Rajasthan especially in rural area which is strengthened (presented) by the disparities in literacy reflecting the low socio-economic status of families. There is male domination in education sector in Rajasthan due to which females have been less fortunate to be educated despite many government programs like National Literacy Mission.

Although there has been improvement in overall literacy rate with the government schemes but female literacy has not achieved desired levels especially among females in rural areas. The main hurdle in promoting literacy in rural areas is lack of employment oriented education. Other reasons behind low level of literacy in rural area are negative attitude of parents, lack of transportation facilities, child marriage, low economic status and excess burden of house related work. If there are male and female children in the family, preference will be given to the male child to provide him school level as well as higher education. On the other hand, girls will be required to help their mothers in their household chores. These problems need to be focussed at policy level to uplift female literacy level by providing skill development along with education.

The lowest male-female disparity in literacy according to disparity index lies in Meghalaya in case of rural areas and in Mizoram in urban areas. This presents a positive picture of the north eastern states as performing states in terms of literacy. Low disparities show equal treatment and opportunities to both males and females. Mizoram ranks the highest in total urban literacy rate as well as in urban female and urban male literacy rate. Mizoram tops in enrolment ratio at upper primary level. Meghalaya is quite high in female literacy despite being low in overall literacy rate and it is having second highest enrolment ratio at both primary and upper primary levels. In north eastern states the tribal societies show high literacy rate and has lower gender disparity in literacy in tribal dominated hilly areas. The gross enrolment ratio of the northern states is improving and is much above all India enrolment ratio.

4. Policy Recommendations

It is very important that the government of the day recognizes the urgent need to address concerns in the education sector. Of course literacy is the first step towards educating people and thus a workable approach needs to be formulated so as to attain literacy and educational requirements of a huge population that has the potential to deliver a great demographic dividend

1. First and the foremost the existing facilities must be improved to ensure attainable efficiency. The poor infrastructure of schools in remote areas, lack of teachers and shortage of books with the students is highlighted in news every now and then. This calls for a dedicated monitoring mechanism and strict supervision. Since education is a state subject, each state government must fix accountability at relevant levels of administrative machineries to ensure proper functioning of their education departments right from the ministerial to school teacher level. Public representatives at panchayat and municipal levels must also be encouraged to review the facilities pertaining to education in their respective spheres of influence.

2. As the analysis shows that rural areas are more at a disadvantage for both genders. Thus a dedicated intervention from the government is necessary at the rural level. Schemes like 'Mid-Day Meals' that gained great success must be furthered so as to assure not only school enrollment for poor kids of village but also to enrich and nourish the growing kids. A dedicated and transparent real time monitoring system can be put in place to improve the efficiency of such schemes. This monitored data can also be placed on relevant government website to ensure public review.

3. The analysis also portrays a grim situation in opportunities available to the girl child with respect to education. Early dropout and certain socioeconomic constraints have been responsible for low literacy of half of our population. Schemes like 'Ladli Lakshmi Yojna' initiated by Delhi Government and similar initiative under different names by states like Rajasthan, Madhya Pradesh, etc. must be adopted by other states too to encourage education of the girl child. 'BetiBachaoBetiPadhao' is an excellent initiative in this direction. As an added feature to such initiatives the government must also ensure vocational training in school curriculum, particularly for girls. This would give a logical extension to education and help build livelihood skills in girls. A synergy between the 'BetiBachaoBetiPadhao' & 'Skill India' can be worked out.

4. To holistically address the problems pertaining to literacy and education, the society needs to be sensitized. It is necessary to launch crusades against social evils like child marriage, preference for male child etc. The civil society needs to be activated and

supported proactively by the government in organizing awareness campaigns and enlighten the society about the ills of illiteracy. Even after 70 years of independence there are certain pockets in the country that are plagued by parochial mindset. This needs to be changed to attain the above mentioned goals in the first place.

5. The private sector and Public Sector Companies must be encouraged to extend financial help for the cause under their Corporate Social Responsibility. A dedicated pool of funds for realizing measure to encourage education, fueled by CSR contributions from all over, can be planned at the national level. This can be used to provide better school infrastructure, aiding conveyance like bicycles for young kids, etc.

6. Conclusion

The analysis clearly indicates that there are a wide range of variations in gender disparities in literacy rate between states and a similar situation emerges when analysis is made within states as per 2011 census. The literacy rates in rural areas are lower than the national percentage as a whole and also within male and female categories. It is found that there is greater gender parity in literacy rate of the urban areas. The male-female disparity is more in rural population than in urban population. This disparity speaks volumes about the socio-economic status of population in both areas. It can be concluded that there is an inverse relationship between literacy and gender disparity.

Based on this empirical study, it is also found that the maximum gender disparity is in the state of Rajasthan in both rural and urban areas. On the other hand Meghalaya has the highest gender parity in case of rural population as Mizoram has for urban population. Consequently, there is a dire need to focus on the pertinent challenge of gender disparity in literacy rate particularly in rural areas because of low female literacy rate across as well as within states. This would be the most important task in order to harness the demographic dividend that our country offers today. Moreover, female literacy is a key element of an advanced and progressive society.

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