

Analysis of Spatial Distribution of Literacy in Jalore District of Rajasthan

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ABSTRACT

Literacy is the ability of a person to read and write a simple message with understanding in any language. The trend of literacy indicates the speed at which changes are taking place in the life and economy of a particular society. Jalore district, located in the south-western part of Rajasthan, is the most backward district in terms of literacy in Rajasthan, which falls exclusively in the category of rural district. 92 per cent of the population of the district lives in rural and backward areas where education has very less economic and social relevance. This research paper is an attempt to analyze the trends of literacy rate, spatial pattern, rural-urban and difference in male-female literacy rate in Jalore district. Efforts have been made to highlight the literacy related characteristics of a particular area through maps by using geospatial technology to identify the spatial distribution of literacy rate. As a result, groups of villages have been formed in the district on the basis of literacy rate. In whole district, average male literacy rate is more than 60 per cent in 60 per cent of the villages while average female literacy rate is about 20 per cent in 50 per cent of villages. This huge difference (32.2 %) in the male-female literacy rate in the district reflects gender inequality and this difference is the highest among all the districts of the state. This study tries to investigate the possible reasons for the high level of difference between male and female literacy rates and suggest some measures to reduce this gap.

Keywords : Literacy rate, High level gap, Spatial distribution, Geospatial technology

INTRODUCTION

Literacy is a sensitive indicator of the social, economic and cultural progress of a region. It develops the personality and rationality of individuals, and enables them to perform certain economic, political and cultural tasks. Therefore literacy plays an active role in the socio-economic changes of the society. Literacy or education in itself does not generate socio- economic progress but its lack can certainly hinder development work. Apart from the acquisition of knowledge and values conducive to social development, education provides many other benefits such as development of mind, training in logical and analytical thinking, organizational, administrative and management skills etc. are acquired through education. Increase in self- esteem, better financial and social status within the community is direct results of education.

Education is also an important factor for better parenting and healthy life. The importance of geospatial techniques to predict solutions to social problems and other socio-economic aspects is a new area of research. For example, Sharma *et al.* (2020), by doing hotspot analysis of spatial distribution of literacy at tehsil level in Rajasthan, used GIS. Through technology, different indices were extracted from maps and analyzed and the research found that there is a clear difference in the rural and urban literacy rates in the north- eastern part and the south-western part. Similarly, Chand (2015), has also tried to point out the major areas of spatial distribution of literacy in Rajasthan and explain their possible factors and found in the research that the deviation of literacy rate is affected by the economic condition of the people and rural areas (Dutta, 1982; Joshi, 2000; Kumar, 2015). Agriculture in the areas is not so developed that it can

How to cite this Article: Chouhan, Devendra Singh and Lal, Bhawara (2024). Analysis of Spatial Distribution of Literacy in Jalore District of Rajasthan. *Internat. J. Appl. Soc. Sci.*, **11** (5&6) : 181-187.

lead to prosperity in literacy. Yadav *et al.* (2021), analyzed the number of colleges per lakh population in Rajasthan and the disparities between them and found that people in rural areas are not able to provide higher education to their girls because they do not have adequate facilities for higher education is not available and Even if facilities are available, they are available at the tehsil headquarters (Debnath and Ray, 2019). Singh (2016), in his research data analysis, found poverty and economic condition to be the main reasons for low literacy rate. Singh (2015), in “Challenges and Strategies of Female Literacy in India” analyzed the factors affecting female literacy, such as poor school environment for girls, low enrollment in schools, early marriage, Dowry system, poverty, patriarchal society etc. In his research, he described the literacy related policies of the Government of India as weak and described the political influence on these policies (Malik, 2019; Ram, 2014).

Study Area:

Jalore district, located in the south- western part of the state, is administratively divided into 7 tehsils and 801 villages. Jalore district is the 11th largest district of the state in terms of area with 3.11 per cent of the total land area of Rajasthan. According to Census 2011, the total population of the district is 18.28 lakh. The population density in the district is 172 persons per square kilometer, Which is the average population density of the state of 200 persons per square kilometer. The main reason for which is the expansion of the Thar Desert in the entire district. Due to the desert expansion in the district, in terms of physical facilities, there are a total of 1931 government schools in which there are a total of 8262 government teachers and 168 contractual teachers, while 261033 students are registered in the total 1931 government schools, Which is less than the student-

teacher ratio of 30:1 (32:1) as per the National Education Policy Framework, while the district has an average of 4.28 teachers per school. Therefore, due to lack of physical facilities in the district, the literacy rate here is also low (54.86 %), in which the male literacy rate is 70.67 per cent, while due to social backwardness, the female literacy rate here is 38.47 per cent, which is less than all the districts of the state. At present (from 7 August 2023), two new districts have been created by dividing Jalore district into two, which have been named Jalore and Sanchore, respectively (Map 01).

METHODOLOGY

The main objectives of the present study are to analyze the difference in rural-urban and male-female literacy and the spatial pattern of literacy in Jalore district. For the research paper, secondary data from Primary Census Abstract-2011 has been made the basis. To fulfill the objectives, taking village as the unit of data, the data has been tabulated and average and percentage has been calculated. The village-wise spatial pattern of literacy rate has been analyzed through maps through choropleth method by QGIS 3.22 software.

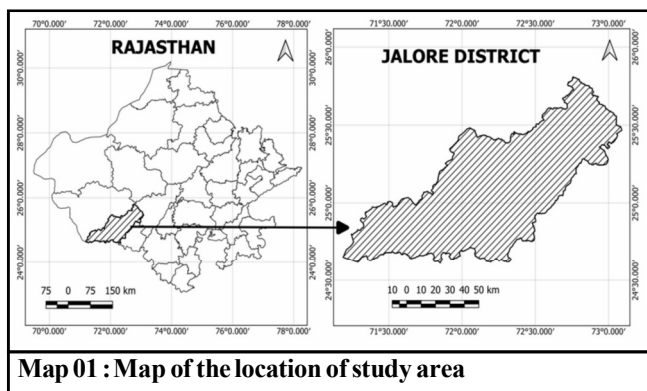
The following formula was used to calculate literacy rate

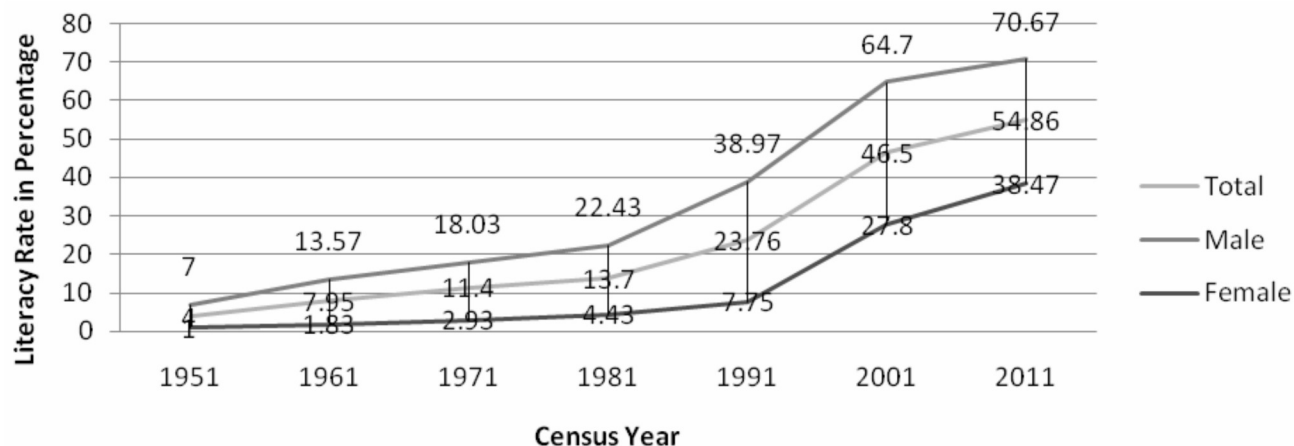
$$= \frac{\text{Number of literate persons aged 7 years and above}}{\text{Total population aged 7 years and above}} \times 100$$

RESULTS AND DISCUSSION

Trend of literacy rate:

It is clear from Fig. 1 that from the first census after independence in 1951 to the latest census 2011, Jalore district is very backward in terms of literacy. In Diagram 01, the trend of literacy rate of the district from 1951 to 2011 is divided into two stages can be done. The literacy rate of the district in the first phase (from 1951 to 1981) was 4 per cent to 13.7 per cent which shows the slowest growth rate while in the second phase (from 1991 to 2011), general growth can be seen. Literacy in 1991 the rate more than doubled (54.86 %) in 2011, from 23.76 per cent. Second this increase in phase is the result of effective implementation of government policies and schemes. According to the 2011 census, Jalore district has the highest literacy rate in the state It is at the last 33rd position, while the literacy rate of the district is less than the national literacy rate (74.04 %) and The state literacy rate is very low (66.10 %).





Source: Primary Census Abstract (2011), Computed By the Author

Fig. 1 : Literacy Rate in Jalore district :1951-2011

Difference in male-female literacy rate:

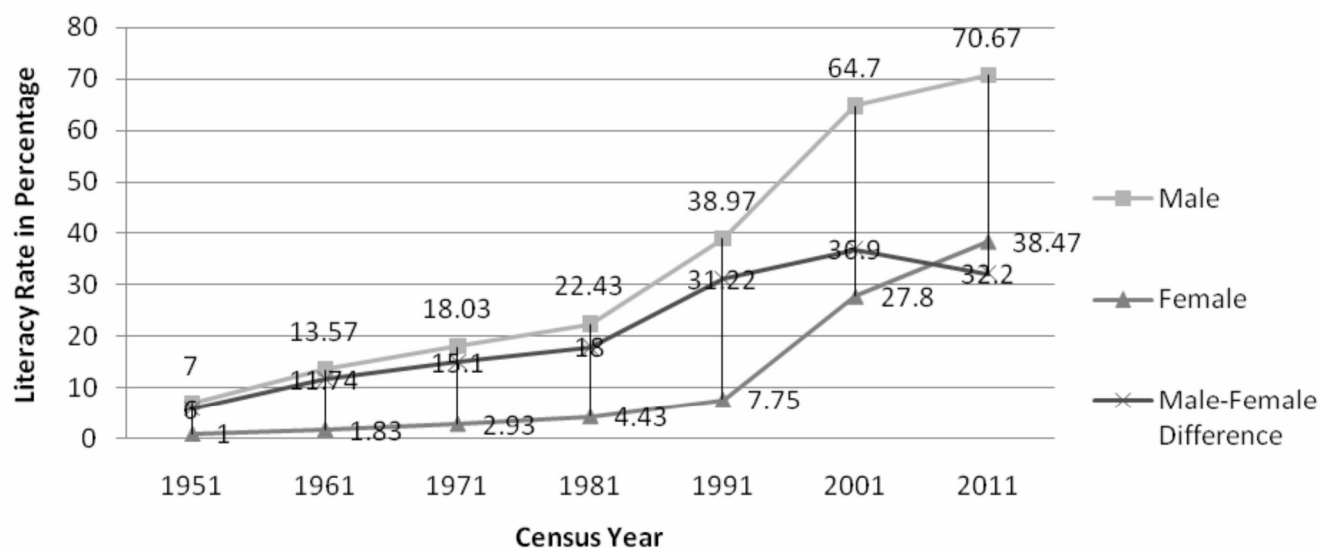
The difference in male- female literacy rates is an important aspect of literacy. Fig. 2, it is clear that the difference in male- female literacy rate in Jalore district is very high. In the census year 1951, the difference between male and female literacy rate in the district was 6 per cent, which It increased to 31.22 per cent in the year 1991 and 36.9 per cent in the year 2001, but In the census year 2011, this difference has reduced from 36.9 per cent to 32.2 per cent.

The main reasons for the decrease in the difference

between male and female literacy rates between 2001 and 2011 can be considered to be the arrival of Narmada Canal water in the south-western region of the district, implementation of effective government schemes and social awareness over time. According to the latest census 2011, this difference between male and female literacy rate in the district (32.2 %) is more than all other districts of Rajasthan.

Rural-urban and male-female literacy rate:

Jalore district comes in the category of rural districts,



Source: Primary Census Abstract (2011), Computed By the Author

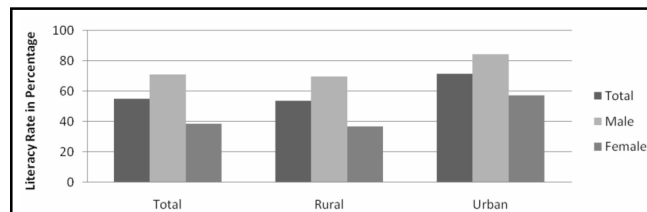
Fig. 2 : Difference in Male-Female Literacy Rate in Jalore district :1951-2011

in which 91.7 per cent of the total population lives in rural areas and 8.3 per cent lives in urban areas. From Table 1, it is clear that the rural literacy rate in the district is 53.34 per cent, in which the male literacy rate is 69.38 per cent and the female literacy rate is 36.78 per cent, while the literacy rate of people living in urban areas is 71.08 per cent, in which the male literacy rate is 84.15 per cent and the female literacy rate is 84.15 per cent. The rate is 56.95 per cent. The proportion of people residing in rural areas in the district is very high, while the literacy rate is low for which many factors are responsible like poverty, social evils, less material comforts etc. (Table 1 and Fig.3).

Table 1 : Rural-Urban and Male-Female Literacy Rate of Jalore District, 2011 (In Percentage)

Type	Total	Rural	Urban
Total	54.86	53.34	71.08
Male	70.67	69.38	84.15
Female	38.47	36.78	56.95

Source: Primary Census Abstract, Computed By the Author



Source: Primary Census Abstract (2011), Computed By the Author

Fig. 3 : Rural-Urban and Male-Female Literacy-Rate of Jalore District, 2011

Spatial Distribution of Block wise Literacy Rate:

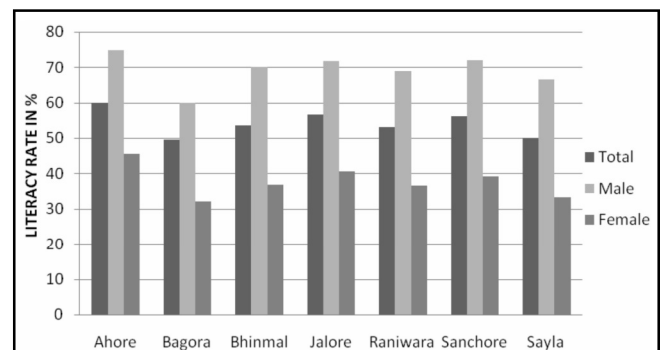
Block- wise spatial distribution of literacy varies considerably in Jalore district. It is clear from Diagram 04 that no block has more than 60 per cent literacy rate. The highest literacy rate is in Ahor block (59.95 %), here the male literacy rate (74.78 %) and female literacy rate (45.66 %) are also highest, while the lowest literacy rate is in Bagora block (49.64 %), the male literacy rate here is (66.05 %) and female literacy rate (32.15 %) are also the lowest. According to the data, the literacy rate in Bagora and Sayla blocks is lower as compared to other blocks, the main reasons for which are considered to be the low employment potential due to unavailability of water and rocky soil and the weak economic condition of the people living in the area. On the contrary, Ahor And the main reason for high literacy rate in Jalore block is

considered to be geographical conditions and Jalore district headquarters, whereas the main reason for high literacy rate in Sanchoore block is considered to be Narmada Canal (Table 2 and Fig. 4).

Table 2 : Blockwise Literacy Rate in Jalore District, 2011 (In Percentage)

Block	Total	Male	Female
Ahore	59.95	74.78	45.66
Bagora	49.64	60.05	32.15
Bhinmal	53.57	70.2	36.82
Jalore	56.54	71.85	40.63
Raniwara	53.18	69.01	36.53
Sanchoore	56.18	71.94	39.14
Sayla	50.13	66.47	33.36

Source: Primary Census Abstract, Computed By the Author



Source: Primary Census Abstract (2011), Computed By the Author

Fig. 4 : Blockwise Literacy Rate : By Gender (2011)

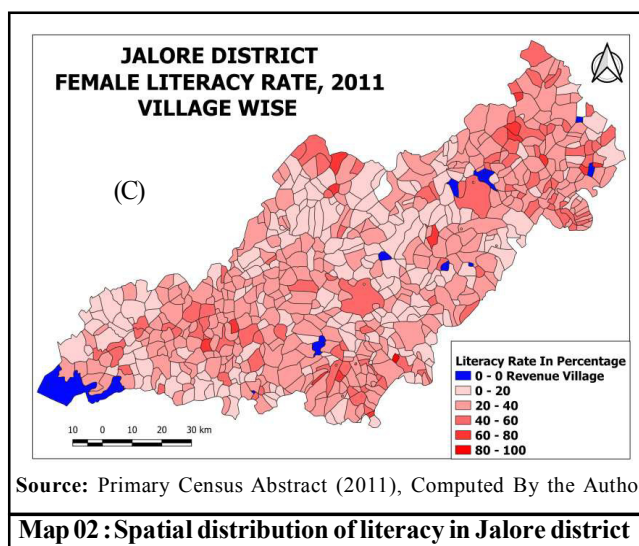
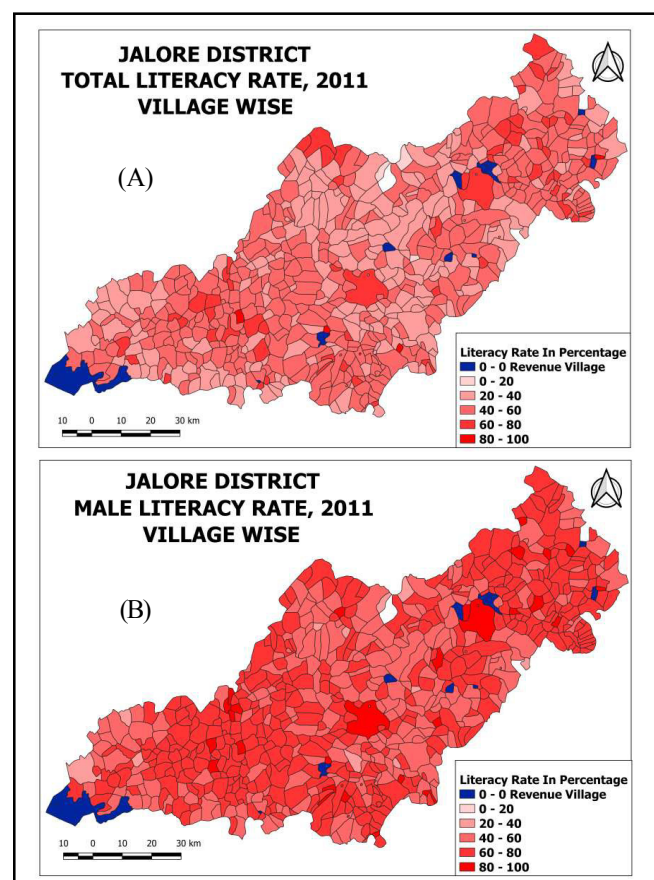
Spatial distribution of literacy in Jalore district:

The spatial distribution of literacy rates varies across Jalore district. It is clear in Map 02- A, B and C that 12 villages are without human population (revenue villages). And in the entire district, there are groups of villages on the basis of literacy rate, such as there are groups of villages with low literacy in the south- western and central parts of the district. The main reason for low literacy rate in the south- western part of the district is the complete desert conditions, whereas in the central part of the district, the main reason for low literacy rate is considered to be low employment potential and poverty due to unavailability of water and rocky soil.

It is clear from Map 02- A that in the entire district, the number of villages with 20-40 per cent literacy rate is 223 and the number of villages with 40-60 per cent literacy rate is 368 and the number of villages with 80-100 per cent literacy rate is only 4 Which shows that the

number of villages with high literacy rate in the district is very less. Map 02- B displays the male literacy rate in Jalore district while Map 02- C displays the male literacy rate in Jalore district. By comparing both Maps 02- B and 02- C, it becomes clear that the number of villages with 0-20 per cent male literacy rate is not even one, whereas the number of villages with 0-20 per cent female literacy rate is 226. The number of villages with 20-40 per cent male literacy rate is 11, in the same group the number of villages with female literacy rate is 325 and the number of villages with 80-100 per cent male literacy rate is 27, while the number of villages with 80-100 per cent female literacy rate is 27. The number is only one.

From the comparative perspective of both Maps 02- B and C, it is clear that the number of villages with male literacy rate is highest between 40-80 per cent, whereas the number of villages with female literacy rate is highest between 0-40 per cent. So, in conclusion, the level of female literacy in Jalore district is low and the average female literacy rate of the entire district is 38.47 per cent, whereas the male literacy rate in the district is medium and the average male literacy rate of the district is 70.67 per cent.



Reasons for low literacy rate in the district:

The Thar Desert:

Desert extends throughout Jalore district. Where due to low population density and less physical facilities, the educational environment is also less. Due to complete desert conditions in Rankhar and Nehad (flow area of Luni River) areas in the south- western part of the district, low population density as well as low literacy rate is seen here.

Poverty:

Poverty is a family with better education, poor nutritional status and other facilities. Deprives them of opportunities. Jalore district has a very high poverty rate due to desert expanse and rural population. According to the SDGs Report 2022, the population living below the poverty line in the district is 24.56 per cent and 10.27 per cent of the population is deprived of their own house for residence. According to the SDGs Report 2022, it ranks 12th among all 33 districts in the state in poverty index with 69.25 per cent.

Rurality Index:

Labor and agricultural economy are the main characteristics of rural areas. A large part of the population in Jalore district lives in rural areas. It is clear from Table 1 that the rural literacy rate in the district is 53.34 per cent while about 92 per cent of the total population of the district lives in rural areas. Whereas the literacy rate of people living in urban areas is 71.08 per cent whereas only 8 per cent of the total population of the district lives in urban areas. The proportion of

people residing in rural areas in the district is very high, while the literacy rate is low, where less number of schools and greater distance between schools are also the main indicators of low literacy rate.

Social evils:

Due to the evils, customs and illiteracy prevalent in the society, there is less awareness among the people about education. In the society, giving good and quality education and respect to boys rather than girls, child marriage, dowry system, purdah system, maximum load of housework, narrow perspective etc. are the many reasons due to which due to the social barriers prevalent in the society, people over time Are unable to move forward together.

Migration:

Due to poverty and lack of employment, people migrate from one place to another. The external migration rate in Jalore district is 17.59 per cent, which migrate to nearby states (Gujarat: 21.46 %, Maharashtra 24.15 %) for employment, education and other purposes. Adolescent children living in rural areas of the district, especially in villages isolated from the state of Gujarat, migrate in search of employment to the states of Gujarat, Maharashtra or South India States even before completing school education (as soon as they pass 9th or 10th class). In the end these children become literate but remain deprived of higher education.

Governmental efforts for improvement in the field of education:

Social barriers contribute significantly to illiteracy and gender inequalities but government policies attempt to address these. The implementation of government policies and its schemes are working effectively in providing equal opportunities to boys and girls, encouraging enrollment in schools and reducing the gender gap in literacy rates. Governments provide incentives such as scholarships, free textbooks, mid-day meals, laptops, scooters and financial assistance to encourage enrollment in schools. Governments try to provide equal and quality education to all communities through their schemes and work on schemes like Beti Bachao Beti Padhao and Sarva Shiksha Abhiyan to reduce gender disparity in literacy rate. Following are the details of the major schemes being run by the government to encourage enrollment in schools :

1. Mid-Day-Meal scheme: The main objective of this scheme, launched by the Ministry of Human Resources and Development (Government of India) on 15 August 1995, is to increase enrollment and attendance in schools as well as to improve the nutritional level of children. Along with the Mid Day Meal Scheme, “Annapurna Milk Scheme” was started by the Government of Rajasthan on 2 July 2018, the objective of which is to increase the enrollment and enrollment of students studying in government primary and upper primary schools. The aim is to increase attendance, prevent drop out and increase nutritional level and provide unnecessary macro and micro nutrients. Under this scheme, the quantity of milk per day per student at primary level (class 1 to 5) is 150 ml. And upper primary level (class 6 to 8) 200 ml. High qualities, hot and fresh milk is provided 6 days a week.

2. Chief Minister Free Uniform Distribution Scheme by Rajasthan Government in 2022: The main objective of this scheme launched is to make children healthy and educated as well as their proper development. Under this scheme, economically weaker and BPL category students studying in government schools will be given Rs 200 along with 2 sets of uniform. Are provided free of cost.

3. Free Textbook Distribution Scheme: Free Textbook Distribution Scheme by Rajasthan State Textbook Board to all the students of class 1 to 8 studying in government schools of Rajasthan and to all the girl students of class 8 to 12, Scheduled Caste and Tribe students and those students whose parents are not income tax payers. Free text books are distributed to create interest in reading among children and to encourage enrollment in schools.

4. Scholarship Scheme: This scheme aims to increase the level of education among students and reduce the dropout rate with the help of financial assistance from the Central and State Government. This scheme is being implemented at different levels by the Central and State Governments. Like (A) 1. Indira Gandhi National Scholarship Scheme, 2. Swami Vivekananda Single Girl Child Scholarship Scheme, 3. Maulana Azad National Scholarship Scheme etc. by the Central Government. (B) 1. Pre- Matric Scholarship Scheme, 2. Post- Matric Scholarship Scheme, 3. Rajasthan Chief Minister Higher Education Scholarship Scheme, 4. Chief Minister Sarvajan Scholarship Scheme etc. by the State Government.

5. Free Scooty Distribution Scheme: With the aim of motivating talented girl students for higher studies after regular studies till 12th and providing vehicle facilities, the state government has launched two separate schemes from April 2020 has been started. 1. Kali Bai Bhil Meritorious Girl Scooty Scheme, 2. Devnarayan Girl Scooty Distribution and Incentive Fund Scheme.

6. Rajasthan Free Laptop Distribution Scheme: This scheme was started from the academic session 2013-14 with the objective of providing quality education in the government schools of Rajasthan, connecting students with modern digital education system and promoting digital education. Under this scheme, 21300 laptops are being distributed every year to the meritorious students of class 8th, 10th and 12th.

Conclusion:

To eliminate illiteracy prevalent in the society, not only the government but every citizen should work on this. The literacy rate of Jalore district is less than the national literacy rate of 74.04 per cent and the literacy rate of the state is less than 66.10 per cent (54.86 %), in which the educational condition of women is even worse, because the female literacy rate here is less than the national female literacy rate (65.46 %).) is much less (38.47 %) for which many important factors are responsible like expansion of Thar Desert, poverty, migration, rural population, social evils etc., all these factors promote illiteracy. The large difference (32.2 %) in the literacy rate of men and women indicates gender inequality, the following work can be done to reduce it, increase the literacy rate and provide quality education - providing better health services in rural areas, adequate number of Providing schools and educational facilities in rural areas, creating better school education programs, connecting drop out children back to education, achieving appropriate teacher student ratio for the quality of teaching, emphasizing on vocational education in rural areas, reducing gender inequality. Making special provisions for girls, proper monitoring to detect corruption in the welfare schemes implemented by the government from time to time, till now education making special investments in educating the deprived communities etc.

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