

Historical development of female education in India

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Abstract

The Government has emphasized female education in twenty-first century and when the historical developments are analyzed, it is found that, women were equally educated during Rig-Vedic period and other Vedic periods. During medieval period, education of women becomes restricted due to child marriage. During the British rule, due to the efforts of socio-political reformers, female basic education gradually increased. After independence, the female education is encouraged by the Government by starting women's universities and colleges, providing fellowships and scholarships, female hostels, etc. The paper described the historical developments of female education in India.

Keywords: female education, female hostels, fellowships and scholarships

Introduction

Education has been regarded as the most significant instrument for changing women's subjugated position in the society. It not only develops the personality and rationality of individuals but qualifies them to fulfill certain economic, political and cultural functions and thereby improves their socio-economic status. One of the direct expectations from educational development in a society is the reduction in the inequality among individuals and that is why Education was included as the basic right of every human being in the Universal Declaration of Human Rights. The constitution of UNESCO also directs its efforts to achieve "The ideal of equality of educational opportunity without regard to race, sex or any distinction, economic or social".

Education in India is provided by the public sector as well as the private sector, with control and funding coming from three levels: federal, state, and local. Child education is compulsory. The Nalanda University was the oldest university-system of education in the world. Western education became ingrained into Indian society with the establishment of the British Raj.

A monastic order of education under the supervision of a guru was a favored form of education for the nobility in ancient India. The knowledge in these orders was often related to the tasks a section of the society had to perform. The priest class, the *Brahmins*, were imparted knowledge of religion, philosophy, and other ancillary branches while the warrior class, the *Kshatriya*, were trained in the various aspects of warfare. The business class, the *Vaishya*, were taught their trade and the working class of the *Shudras* was generally deprived of educational advantages. The book of laws, the *Manusmriti*, and the treatise on statecraft the *Arthashastra* were among the influential works of this era which reflect the outlook and understanding of the world at the time.

In ancient India, schools were in the form of Gurukuls. Gurukuls were traditional Hindu residential schools of learning; typically the teacher's house or a monastery. During the Mughal rule, Madrasas were introduced in India to educate the children of Muslim parents. British records show that indigenous education was widespread in the 18th century, with a school for every temple, mosque or village in most regions

of the country. The subjects taught included Reading, Writing, Arithmetic, Theology, Law, Astronomy, Metaphysics, Ethics, Medical Science and Religion.

Female education in India is not a gift of modern civilization. At least 20 women composed Rig-Veda hymns. Gargi and Matreyi were the leading philosophers of the time. Women in the Vedic era so excelled in the sphere of education that even the deity of learning was conceived of as a female popularly known as 'Saraswati'. Girls were allowed to enter in to Gurukuls along with boys. There are also instances of female 'rishis' such as Ghosa, Indrani, Urvashi etc. However, the status of women gradually declined during the post Vedic period. Child wives without education became the order of the day. The situation continued to decline till the coming of the British and the general national democratic awakening, which took place in India during the second half of the nineteenth century. The social reform movements which arose as a result of the interaction with the western civilization stressed on educating the women. The pioneering work of women's education was done by such socio-religious reform bodies as Brahma Samaj, Arya Samaj, Ramakrishna mission and also Danish, American, German and British missionary societies. The history of female education in India has its roots in the British Regime. Women's employment and education was acknowledged in 1854 by the East India Company's Programme: Wood's Dispatch. And thus slowly after that, there had been progress in female education, but mostly at the primary school education level at first. But the progress was only in the richer sections of the society during the pre-Independence

Following independence in 1947, Maulana Azad, India's first Education Minister envisaged strong central government control over education throughout the country, with a uniform educational system. The Indian government lays emphasis to primary education up to the age of fourteen years (referred to as Elementary Education in India). The Indian government has also banned child labour in order to ensure that the children do not enter unsafe working conditions. However, both free education and the ban on child labour are difficult to enforce due to economic disparity and social conditions. 80% of all

recognized schools at the Elementary Stage are government run or supported, making it the largest provider of education in the Country.

India's higher education system is the third largest in the world, after China and the United States. The main governing body at the tertiary level is the University Grants Commission (India), which enforces its standards, advises the government, and helps coordinate between the centre and the state. Accreditation for higher learning is overseen by 12 autonomous institutions established by the University Grants Commission.

As on 2009, India has 20 central universities, 215 state universities, 100 deemed universities, 5 institutions established and functioning under the State Act, and 33 institutes which are of national importance. Other institutions include 16000 colleges, including 1800 exclusive women's colleges, functioning under these universities and institutions. The emphasis in the tertiary level of education lies on science and technology. Indian educational institutions by 2004 consisted of a large number of technology institutes. Distance learning is also a feature of the Indian higher education system.

On the other hand, infant mortality rate, birth rate and total fertility rate are negatively correlated with the lower the educational level of the mother; the more number of children born to her, the greater are the risks of reproductive mortality/morbidity. Now-a-days technological worlds consider education-especially for women is much more important to slower population growth. Hence, progress in literacy is being considered as a component of progress in development. Government of India has devoted pointed attention to the objective of achieving the universal literacy since independence through the effective implementation of the Five Year Plans.

The growing body of literature indicates that as the socialization process proceeds girls are taught to accept feminist, a role equated with dependency, submissiveness, conformity and passivity. Studies are taking note of the fact that women are different in their attitude towards authority at home as well at social relations. The whole process of traditional marriage which is sometimes quite humiliating for the educated girls and problems of dowry and dowry deaths should be seen in this context. Women themselves have adjusted as subordinate groups in society. They have internalized self-sacrificing and expressive values and developed "false consciousness" which includes "beliefs in the appropriation of lower pay, of doing menial work and eschewing leadership position and politics" (Upreti and Upreti, 2000) [27]. Women have a much lower literacy rate than men. Far fewer girls are enrolled in the schools, and many of them drop out.

The globalization policies created opportunities to new professions and one of the worth noting contribution of globalization policy is increase in education and employment of women, especially in developing countries. Women in developing countries usually receive less education than men. More so, women in general enjoy far less employment opportunities than men the world over.

There is reality that where is there is education, there is more status and respect. For this purpose, the Indian Government took to education measures to women in a relatively larger number. For example, in 1901, the literacy level of the females

in India was just 0.6% in increased to 54.16% in 2001. This brought down the gap between male and female literacy rates from 28.84% in 1991 to 21.70% in 2001. Various benefits such as free education, scholarship, loan facility, hostel facility etc. are being given to women who go for higher education. By making use of the new opportunities, a large number of girl students go for higher education today. For example, in 1950-51 the percentage of girl students pursuing higher education was 10.9% that is, out of the total enrollment) and this increased to 32.0% in 1992 in fact, the National Educational Policy 1986, has been in favor of empowering woman through education. It gave a call to remove the gender prejudices by the inclusion of relevant lessons in the curriculum. It promoted the opening of women study centres in colleges and universities.

In many towns and cities, though the educational institutions meant only for female children have been established. But, there are various reasons which deter the girl child's education, especially in rural areas. They are.

- Still there is convention of child marriage and beliefs such as women should not learn and are for housework.
- Generally the numbers of schools in the rural areas are far fewer than in the cities.
- There is, to a great extent, shortage of girls' schools in rural areas.
- Middle schools are located at a distance and are fewer in number.
- Due to poor enrollment of girls, girls' schools are being converted into boys' schools within a year or two.
- There are few women teachers in rural areas- a result of low rural female education and urban teachers are not prepared to accept rural postings. Even if they accept the employment, they frequently remain absent. i.e., on leave without pay and always try for transfer in or near any urban centre.
- In appropriate and inconvenient location of schools in isolated remote rural areas often forbids girls from joining them.
- Rigid school timings are not suitable for the rural girls.
- Hostel facilities, free board and lodging are provided for girls from the Scheduled Caste and Scheduled Tribes, but other girls from families below the poverty line do not avail themselves of this facility. Moreover, these facilities are also scarcely available.
- The curriculum bears no relationship to the real life activities and interests of rural girls (Upreti and Upreti, 2000) [27].

According to the Report of the Committee on the Status of Women in India (1974) the main reasons for the slow growth of female education in the country are as follows:

- a) A large number of girls, by the time they reach the age of eight, are required at home to do various domestic chores, e.g. collecting firewood, coal waste, cow-dung, fetching water from long distances, washing, cleaning, cooking, reaching food and water to parents in their places of work, etc.
- b) Majority of girls of this age group have to look after the siblings, especially when their mothers are engaged in earning a livelihood.
- c) A substantial number of girls are engaged in contributing to the family income by their own labour. The prevalence

- of child labour has long been admitted as (the greatest deterrent to the spread of education among children of the poor. The Committee was appalled by the extent and degree of the use of young girls of five to fourteen working for twelve hours a day to supplement family income. One twelve-year old girl in Andhra Pradesh reported that she could not remember any other pattern of existence in her whole life. Similar is the case in fireworks, matches, weaving and many oilier industries, mostly in the unorganized sector. A very large number of girls in this age group work as domestic servants either as helpers or as independent earners. In Calcutta, the Committee found one 12 year old girl supporting a family of six members by working in a number of houses as a part-time domestic servant. This was by no means an exceptional case. These girls are too exhausted at the end of their day's labour to attend evening classes even if they could be arranged.
- d) In the agricultural sector, girls in the same age-group do share the burden of field labour but mostly in the peak season. Their hours of work being less, it is possible for them to attend school if facilities were available. The Committee felt that the school time should be adjusted according to the seasonal agricultural activities. It should be noted that exclusion from education because of participation in labour is higher among girls than boys, as they constitute a higher proportion of the unpaid family workers. According to the National Sample Survey (1960-67) the labour participation rates for boys and girls in the age group 10-19 is on the decline in urban areas. In rural areas a similar trend is evident in the case of boys, but for girls this decline is negligible.
- e) The survey conducted by the Committee reveals several difficulties in the way of providing facilities for girls' education. Nearly 53% of the respondents referred to shortage of schools in general, 57.65% to the absence of separate schools for girls in many places, 43.57% to overcrowding in schools and 53.95% to distance from house to school. While 39.41% pointed to the shortage of women teachers, 40.46% did not regard this as a difficulty. Other difficulties brought to notice are the lack of adequate transport arrangements and toilet facilities, as also the prevalence of single-teacher schools.
- f) The irrelevance of education as imparted in schools today has been discussed at length by the Education Commission. While endorsing their view, the Committee adds that this has a particularly adverse effect on parents' attitude towards the education of the girls, especially in rural areas. Parents, who have not as yet accepted the utility of educating girls, find in its irrelevance justification for their apathy. One peasant woman in a Punjab village felt that one way of making school education more meaningful would be to train girls to handle and repair tractors. Some women in the Kulu valley wanted training in methods of fruit preservation so that they could fully utilize the produce of their orchards.
- g) Education in the rural areas often results in alienation of the girls from their habitat. While this criticism was voiced in many places, the most vocal opinion was expressed by women in a village of Himachal Pradesh. Since the development of the slate and the standard of living of its people depended on the continued efforts of

- women in agriculture, education in their opinion was becoming an adversary of progress. Girls who completed their formal education in the village did not want to take part in agricultural activities. The problem became more acute when owing to the absence of secondary school in the village; they had to study outside in urban or semi-urban areas. Many of them found village life with its hardships intolerable afterwards. This was particularly so in Nagaland and Himachal Pradesh. Most girls who complete secondary school develop a desire for white-collared jobs, or urban life in some form or the other.
- h) While early marriage or betrothal was undoubtedly the greatest deterrent to the progress of girls' education in the past, it is much less so now. The survey indicates that only 38.1% of the respondents find early marriage a genuine difficulty for girl's education while 41.5% do not agree with this view. The average age at marriage has been rising steadily from 15.4 between 1941-51 to 18 years in rural areas. The percentage of unmarried girls in the age group 10-14 rose from 77.63 to 86.21 in rural areas and from 93.01 to 95.79 in urban areas between 1961 and 1971. For the age group 15-19 this percentage changed from 14.2 to 36.91 in rural areas and 29.4 to 63.76 in urban areas. In educationally backward states, it is still a problem. The average age at marriage for women during 1951-61 was 14.81 in Bihar and Orissa, 16.87 in Madhya Pradesh, 14.52 in Rajasthan and 14.43 in Uttar Pradesh, when the national average was 16.3. The social restriction on girls pursuing their studies after marriage however has been rapidly breaking down. In a high school in Madhya Pradesh the survey team found that 10% of the girls were married. At the higher levels of education the presence of young married women is a normal phenomenon. Nevertheless, the problem still continues to exist in certain communities and areas (Chaudhary, 1988) ^[6].

It is emphasized that the gender discrimination hinders development. So while denial of basic rights (be it education, employment or health care for women) is detrimental to women, this denial, ultimately also harms the society, the nations at large too, by hampering development. Clearly, the gender gaps that are widespread in access to basic rights, access to and control of resources, in economic opportunities and also in power and political voice are an impediment to development. The only solution to this is gender equality, which strengthens a country's ability to grow, to reduce poverty and provide its people – men, women and children – a better life. The issue of gender equality then, needs to be at the core of development policies- both in national and international arenas. The basic factor behind gender inequality is the educational opportunities. That is, there is need to educate the women equally to the men. The education leads to all round development of women's life.

The gender gap in education can be understood in the overall context of the position that women occupy in society. The status of women in India is generally low. They are one of the disadvantaged sections of the society: The cycle of disadvantage starts before birth and continues from neglect of female children through to widowhood. The problem is exacerbated further when gender disadvantage is compounded by class, caste and religious discrimination (Wazir, 2000) ^[28]. The gender discrimination has been formalized and

institutionalized through a plethora of cultural norms and practices and this has contributed in no small measure to gender gap or gender disparity in all spheres of life. This has further led to inequality of status between men and women.

The gender gap in literacy and education is an important dimension of gender inequality, and it is contingent on social, cultural and economic factors. When discriminator cultural practices intervene in precarious living conditions of the marginalized groups, poverty becomes a prime factor for persistence of gender gap in literacy and education. Women belonging to marginalized groups such as the Scheduled Tribes (STs) are more vulnerable to economic hardship. The occupation of the majority of tribal people is agriculture, whose productivity is generally low, and the majority of them live below the subsistence level. Tribal children contribute to the family income by participating in the family occupation and other household work like cattle grazing, and fuel and fodder collection. Since a high proportion of children are involved in survival tasks, many tribal children are prevented from enrolling in schools (Sujatha 1987; NSSO 1990) ^[26].

Women in Basic Education

Basic education has a few specific functions that serve certain special needs in the context of the new society that is being envisioned in the Constitution of India to which reference has already been made (Ganesha Bhatta, 1990) ^[9].

Unlike primary education, secondary education performs several functions which remain sharply differentiated. For each generation of individuals, it is a decision making area. It is one which is all the more important because, the individuals educational or vocational choices are made at this stage, which determines the future occupational, social or economic positions held by the individuals. Realizing the importance of secondary education, Secondary Education Commission as early as in 1952 stated that "The secondary school must make itself responsible for equipping students adequately with civic as well as vocational efficiency and qualities of character that go with it, so that they may be able to play their part worthily and competently in the improvement of national life. They should no longer emerge as helpless, shiftless individuals who do not know what to do with themselves and can only think of either crowding the colleges which, for the majority are a 'cul-de-sec', or as a last and reluctant resort, take up some clerical or teaching job for which they have no natural inclination".

The National Policy of Education provides that "The Education of girls should receive emphasis not only on grounds of social justice but also because it accelerates social transformation". The very First Five Year Plan of Education stated "The general purpose and objective of Women's education cannot, of course, be different from the purpose and objectives of the men's education. At the Secondary and even at the University stage women's education should have a vocational or occupational bias". Similarly, the Secondary Education Commission (1953) stated that "In a democratic society where all citizens have to discharge their civic and social obligations differences which may lead to variations in the standard of intellectual development achieved by boys and girls can be envisaged". The Report of the Committee on Differentiation of Curricula for boys and girls (1959) also emphasized on the same type of education and same role of men and women in the society. The Education Commission (1964-66) endorsed the recommendations of all committees

and commissions about the equality in the educational development of women. The Government's national policy also laid down that "The education system must produce young men and women of character and ability committed to national services and development. Only then will education be able to play its vital role in promoting national progress, creating a sense of common citizenship and culture and strengthening national integration" (Kalbagh, 1991) ^[17].

In spite of the constitutional provision of equality and the recommendations of the committees and commissions about the provision for the same type of education for women as for men, the traditional limited view point of women's education, with a separate role of women in the society, has had a great influence on the planning for women's education.

In 1968, the National Policy on Education was adopted based on the recommendations of the Kothari Commission, which led to the considerable expansion of education facilities all over the country. In rural habitations, schooling facilities were developed within a radius of one kilometer but these did not get translated into detailed structure of implementation.

The National Policy on Education was adopted again in 1986, which was in response to the non-implementation of 1968 educational policy. This policy emphasized on "elimination of disparities, equal access to every Indian of requisite merit, enhancement in support to research and inter-disciplinary research promotion". The National Policy of Education 1986 highlights the problems related to women's education. It clearly mentions that it is not only the subordinate status given to women in society but also lack of pursuit of well-designed programmes for granting them equality of opportunities in all walks of life, nor equal opportunities for education, that has obstructed the growth of women. There are project for women's equality, universalisation of education at primary and elementary levels, secondary and higher education and non-formal education. In the Integrated Child Development Scheme, there is full integration of child care and pre-primary education, both as feeder and a strengthening factor for primary education and human resource development in general.

The National Policy on Education offered a strong support to non-formal, flexible primary and elementary education suited to the needs of working children. The Central Social Welfare Board has developed a condensed course for rural women in languages and mathematics with a view to bringing them into the mainstream. The modules on "Equality of Women" and "Elimination of Sex Bias" have also been developed for the massive Teacher Training Programmes launched in India. India has also taken the lead in Orientation Programmes for key persons and resources all over the country in identification of the areas of sex-bias operating in textual materials in languages. Some methods have also been devised to rectify mistakes by making useful and concrete suggestions so that the stereotyped image of the women is replaced by the image of a "New Woman", who is confident, self-reliant and self-propelled (Kulshreshta, 1989) ^[20].

With efforts of various policies and plans there has been a desirable change in girls' education indicators, but progress towards education for all is slow. Moreover, very conspicuous gender disparities persist in all educational indicators, especially with regard to enrolment and retention at the primary, upper-primary and higher levels of school education. Girls' enrolment at primary, higher primary and secondary

stages have improved since 1951, but gender inequalities prevail at all stages. Girls account for only 43.7 per cent of enrolment at primary level, 40.9 per cent at upper primary level, 38.6 per cent at secondary level and 36.9 per cent at deer and above level. Girls' enrolment at primary level has risen from 5.4 million in 1951 to 49.8 million in 2001 and at upper primary level from 0.5 million to 17.5 million. However, girls' participation in education is still below 50 percent (Anand and Yadav, 2006) [3].

The present system of education which is basically formal and institutional in character continues to prepare young men and women for degrees, which in turn, prepares for only white collar jobs. The system tends to encourage children from elite classes and blocks entry for poorer sections, rural people. Although the Indian government has expressed a strong commitment towards education for all, however, India still has one of the lowest female literacy rates in Asia. The wide disparities between men and women continue. Similarly, there is increase in the drop-out percentage of girls from their school education, due to various factors such as marriage, work, etc. The following table shows the percentage of drop-out percentage of boys and girls in their school education.

In urban areas, the people are aware about the value and importance of education. Hence, there is more literacy rate of girls. But in rural areas, still there are orthodox thinking and traditional ideas which are ruling the girls' life. Hence, the literacy of girls is more in urban areas and less in rural areas. This is also a major reason for gender stratification in education.

Women in Higher Education

Women's advancement in higher education is "a valid indicator of the socio-political status of women in different societies" (Fuchs, 1998) [8]. Any claims and efforts then, to remove poverty, can show results only if they address the issue of gender inequality. In recent decades, there have been large gains, no doubt on comparable levels, in basic rights and opportunities, in life expectancy, education and enrolment ratios for women. But despite these gains, the stark reality has not changed. There still are large gender disparities in basic human rights, resources, economic opportunity, and political rights.

The steady increase in female enrolment at post-secondary level marks the fact that only 11.3 and 3.0 per cent of the girls of the concerned age groups are availing of higher education. The high incidence of females leaving the educational system becomes especially apparent at this stage. Female participation in higher education continues to be mainly on urban, middle and upper class phenomenon. (India, 1975). Regional variations persist, with the educationally backward States such as Rajasthan and Bihar registering low levels of female enrolments. The decision to pursue higher education is based on a number of considerations, but the ones that seem to outweigh the others are the prospective marriage and employment opportunities.

The university enrolment patterns of males and females since 1950-51 as stated above reflects their continuing preponderance in the arts faculty. However, the percentage of females studying 'Arts' is significantly higher than that of males. While the percentage of women in commerce (12.85% in 1981-82) has shown a remarkable increase since 1950-51 (0.4%) the female participation in medicine (3.65% in 1981-

82) has gone down somewhat (5.8% in 1950-51). Women are opting for traditionally male dominated discipline such as engineering, veterinary science, architecture, etc; nonetheless, as the table illustrates they constitute a very small percentage of the total females enrolled. In general, among professional courses women choose teaching, medicine, nursing and law (Ahmed, 1979) [1].

As stated by Wizarat and Arya (2007) [29] higher education is growing at a brisk pace; today there are 389 universities and 18064 colleges that cater to the rapidly growing demand for higher education in the country. At the beginning of the academic year 2006-07, the total student enrolment was 110.28 lakhs, out of this the number of women student was 44.66 lakhs, or 40.4% of the total enrolment. Out of the total number of women enrolled in higher education, 12.35% were enrolled in professional courses. Year after year one hears high praise for the performance of girls at the school level boards results. The name of the board may change but throughout India the phenomenon of poor performance of boys in the board exams remains a constant. A comparison has been made between pass percentage in 10th and 12th board exams across the country which points to a higher success rate for girls and a lower rate for boys. Despite this the percentage share for girls at the diploma/ certificate, graduate, post graduate and research levels fluctuate between a high of 42% and a low of 32%. This is clearly a reflection of increasing rate of drop outs at succeeding levels of higher education. Although, there has been a substantive increase in the number of separate colleges for women - 1902 in 2006-07 as compared to 950 in 1991-92, one can clearly see the need for augmenting the facilities for higher education among women.

The increases in enrolment of girls at the university level and their entry in the non-traditional disciplines indicate that the reservations against co-education are gradually diminishing. However, the consistent preference for the "soft" options suggests that the choice of courses is not based on academic ability alone, and that the deeply ingrained value systems and the perceived benefits have an important role to play as well.

There is considerable evidence to show the presence of sexual stereotyping in the choice of short and long-term vocational and technical courses (non-degree) (Karlekar, 1987) [18]. Girls are more likely to opt for "feminine" courses such as secretarial practice, tailoring, interior decoration and beauty culture; boys on the other hand prefer television repair, electronics, machine operator, etc. These choices are similar to those seen in other parts of the developing world. In general, the courses popular with women don't require considerable physical exertion or "scientific aptitude" and are deemed as "appropriate" for women. Considering that most women who opt for the vocational stream do so with future employment in mind, their choice of courses reflects their perceptions of prospective job opportunities. Perhaps, the feeling their chances for securing employment would be higher if they chose socially acceptable vocations for women also compels them to select courses that are not necessarily of interest to them.

In this respect, Chanana (2004) [5] suggested that attempts to analyze higher education trends, especially trends among women students, are bound to be rather sketchy because researcher are confronted with almost a total lack of reliable data. Most private institutions discourage such inquiries and the public sector is equally lacking in transparency. The

Regulatory bodies for higher education in India like the MHRD, the UGC, AICTE etc. have yet to start collection and organization of gender specific data on enrolment at the level of institutions, disciplines, courses and yearly stages. No separate data base exists on private self-financed un-aided institutions; these institutions have in any case not evinced any great interest in providing facilities for higher education in pure sciences, social sciences, arts and humanities. Despite the inadequacies of the available data one can however see some clear trends emerging, there is a perceptible shift away from arts and teaching and a positive movement of roughly the same magnitude towards Commerce/ Management and Engineering/ Technical Education. These shifts, marginal as they may appear are fairly large when seen in absolute terms and not as mere percentages. The fact that they exhibit the same preference shift that is clearly visible among men is an indication that educational / professional choices are gender neutral and given an opportunity more and more women might like to exercise this choice shift. Although women are now enrolling in professional education in relatively larger numbers, the available data does not throw any light on the women students' preferences for subjects, specializations and institutions (Chanana, 2004) [5].

In this context study conducted by Gupta (2007) [12] on Women Research Scholars in Indian Institutes of Technology (IITs), shows that the assumptions of 'universalism' in science and rationality in educational organizations need to be examined to understand the cause of women's low participation in science and engineering at the higher level. Inter-linkage between organization of academic science and the socio-cultural systems such as family and society reproduce social relations at the institutes. Social milieu is important since science and educational institutions are embedded in the social context. While the practice of academic science is mediated by the need for groups and advisor-advisee interaction, these groups and interactions are, in turn, governed by the social norms and social backgrounds of the people involved. The message received from the social and educational environment is often mixed and cannot be labeled as negative for girls at all times. Yet, it is not unequivocally in favour of girls, as in the case of boys. Girls who take up doctoral programme in science have usually been encouraged by the family but not without contradictions that reflect gender role-expectations in society. Boys who reach doctoral programme in science are more conservative than girls in our sample. In the organizational environment, lack of informal interaction with the advisor, other faculty members and colleagues leads to isolation of women research scholars. As a result, the latter have to depend excessively on their own capability and merit leading to considerable hard work among women. In response to the social and academic environment, women seem to lose their self-esteem. This along with a lack of mentorship of women students at the doctoral level may affect prospects of these students to pursue scientific research as a career.

The INSA (Indian National Science Academy, 2004) [4] Committee on 'Science Career for Women' investigated the present status of women with regard to study and practice of science and enquired into the factors that influence women who wish to choose science as a career. The committee came up with three major recommendations- (i) Steps to reduce the gender gap from school level upwards; (ii) Initiating special

programmes for women to encourage study and practice of science by them; and (iii) Special steps to reduce the stress on women scientists and students at workplaces. Implementation of these steps will certainly go a long way in helping aspiring women scientists to step forward and make their richly deserved contribution in the sciences.

Conclusion

India with the help of state governments also formed several policies and strategies to control gender stratification in education. They include the reservation in employment for women, establishing the women universities at different places, scholarships to women scholars, etc. But still there is a disparity in education among the women. The main reason for such disparity in education is social culture and beliefs, which must be removed from the society.

References

1. Ahmed, Karuna. Equity and Women's Higher Education. *Journal of Higher Education*. Moonsoo. 1979; 5(1):33-50.
2. Amartya Sen. Many Faces of Gender Inequality. *Frontline*. 2001; 18(22).
3. Anand, Mily Roy, Yadav, Mona. The inclusion of SC girls in Education: A long path ahead. *Social Change*. 2006; 36(4):114-130.
4. Chanana K. The dialectics between tradition and modernity and women's education in India. *Sociological Bulletin*. 1990; 39(182)75-91.
5. Chanana K. Gender and disciplinary choices: women in higher education in india. Paper prepared for the UNESCO Colloquium on Research and Higher Education Policy on 'Knowledge, Access and Governance: Strategies for Change', Paris, 2004, 1-3.
6. Chaudhary Pratima K. Changing Values among Young Women. Delhi: Amar Prakashan, 1988, 146-176.
7. Desai N. Educated Women: Some problems of her role perception and role performance. IN: Golden Jubilee Commemorative Volume (1916-1966). Edited by Sardar, Mehta and Desai. Mumbai: SNDT University, 1968.
8. Fuchs Stefan. Gender Disparities in Higher Education and Academic Careers in Germany and the United States, 1998. <http://www.aicgs.org/documents/fuchs.pdf> accessed on 20th June 2016.
9. Ganesha Bhatta HS. Secondary Education: A Systems Perspective. New Delhi: Ashish Publishing House, 1990.
10. Ghosh Buddhadeb, De Prabir. India Infrastructure Database 2005. Volume-II. New Delhi: Bookwell, 2005.
11. Ghosh Arunkumar. The Gender Gap in Literacy and Education among the Scheduled Tribes in Jharkhand and West Bengal. *Sociological Bulletin*. 2007; 56(1):109-125.
12. Gupta Namrata. Women Research Scholars in IITs: Impact of Social Milieu and Organizational Environment. *Sociological Bulletin*. 2007; 56(1):23-45.
13. India, Government of Towards Equality: Report of the Committee on the Status of Women in India. New Delhi: Ministry of Education and Social Welfare, 1975.
14. Indian National Science Academy Science Career for Indian Women: An Examination of Indian Women's Access to and Retention in Scientific Careers. New Delhi, 2004. [Http://www.insaindia.org/scienceservice/](http://www.insaindia.org/scienceservice/) accessed on 28th May 2016.

15. Jacobs Jerry A. Gender Inequality and Higher Education. *Annual Review of Sociology*. 1996; 22:153-185.
16. John Vaizey. *Economics of Education*. London: McMillan Publishers, 1973, 59.
17. Kalbagh Chetana. Ed *Women and Development: Policies and Plan Strategies for women's Development*. New Delhi: Discovery Publishing House, 1991, 110-146.
18. Karlekar Malvika. Education. IN: *Women and Society in India*. Edited by Neera Desai and Maithreyi Krishnaraj. New Delhi: Anant Publications, 1987, 148-183.
19. Kazi AK, Ghadially Rehana. Perception of the Female role by Indian College Student. *Sociological Bulletin*. 1979; 28(1-2):59-69.
20. Kulshreshta Indira Noopur. *Women's Studies in School Education: A New Perspective*. Bangalore: Sterling, 1989, 56.
21. Mehta R. *The Western Educated Hindu Women*. New Delhi: Asia Publishing House, 1970.
22. Mies M. *Indian Women and Patriarchy: Conflicts and Dilemmas of students and working women*. New Delhi: Concept Publishing Co, 1980.
23. Secondary Education Commission: Report of the Secondary Education Commission 1952-53. New Delhi: Ministry of Education and Social Welfare, Government of India, 1972, 28-29.
24. Shankar Rao CN. *Indian Society*. Mangalore: Jai Bharat Publications, Mangalore. 2006.
25. Shukla Chhaya. *Women, Family and Social Problems in India*. New Delhi: Mohit Publications, 2002.
26. Sujatha K. *Education of the Forgotten Children of the Forest: A Case Study of Yennadi Tribe*. New Delhi: Konark Publishers, 1987.
27. Upreti HC, Upreti Nandini. *Women and Problems of Gender Discrimination*. Jaipur: Pointer Publishers, 2000.
28. Wazir Rekha. Profiling the problem. IN: *The Gender gap in Basic Education: NGOs as Change Agents*. New Delhi: Sage Publications, 2000, 15-37.
29. Wizarat Kausar, Arya Vijay Vrat. Women in Higher Education and in the Work Force: Need to Bridge the Gender Gap. *University News*. 2007; 45(50):13-19.
30. World Bank. *Equity and Development: World Development Report*, New York, Oxford University Press, 2006.