
Achieving Gender Equality and Digital Empowerment of Women through ICT Integration in Women's Higher Education

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Abstract

In the present era of globalization, empowerment of women and gender equality are the significant issues. Gender equality is a sign as well as an instrument of development. It is a recognised fact that unequal educational status of men and women is both a cause and consequence of a wider gender inequality. In such a prevailing climate of inequities and inequalities, education is a powerful tool for women's empowerment. Education being one of the most important means of empowering women, many programmes, schemes, awards and facilities have been initiated by the Central and State governments to promote women education. Empowerment of women in the context of knowledge societies requires strengthening the abilities and skills of women so that they gain insight into the issues affecting them and enhance their capacity to voice their concerns. In this context, Information and Communication Technologies (ICTs) are emerging as a powerful tool for gender empowerment in many developing countries.

Today, education of women along with the imparting of ICT and IT skills is the only panacea for all kinds of problems. ICT and IT can act as powerful catalyst and tool for political, social, economic, psychological and gender empowerment of women. The Beijing Declaration and Platform for Action adopted at the Fourth World Conference on women in 1995 stated that, "ICT is a powerful tool that women could use for mobilization, information exchange and empowerment". The digital empowerment of women is thus, a vital element in making and transforming a developing country into a developed country. Digital empowerment and gender equality of women is possible, only if they are able to increase their participation and access to technical skills, knowledge and decision making. The author in the present research paper focuses

upon the fact that through ICT integration in women's higher education, it is possible to achieve the twin objectives of gender equality and abridging the digital divide. The present paper also attempts to explore and analyze the problems and obstacles which are there in the empowerment of women.

Key Words: Empowerment, Digital Divide, Digital Empowerment, Gender Equality, ICT

Introduction

Mahatma Gandhi, once said that, *“If you educate a man you educate an individual, but if you educate a woman, you educate an entire family”*.

The role of women in the development of any society is of utmost importance. The only thing which determines whether a society is strong and harmonious or otherwise is the role assigned by the society to women. Empowering women implies inspiring women so that they muster courage to break free from the shackles of societal or religious bonds that have traditionally kept women suppressed. In ancient India women enjoyed equal educational opportunities with men. Both boys and girls used to undergo a ceremony of Upanayana in Vedic days to study Vedas. It was only in Medieval India that political and social transformation lowered the status of women and consequently their participation in educational activities. After the advent of British rule, however, a climate was built in favour of women's participation in economic and social life and female education received an impetus (Pandey, Vinita, 2005)¹³.

During British period, various socio-religious movements, led by eminent persons like Raja Ram Mohan Roy, Ishwar Chandra Vidyasagr, Mahatama Jyotiba Phule, Periyar and Baba Saheb Ambedkar and other leaders, did a lot to make education available to women of India. However women's education got a real fillip only after India got its independence and the government took various measures to provide education to all women which improved the general and overall scenario of educational status of women in India. As per 2001 Census, the literacy situation is shown in Figure 1.

Figure 1: Overall Literacy Situation in India in 2001

S.No.	Year	Age group	Population in Millions	Literacy In %	Literates in millions	Illit. in millions	Male lit.rate	Female lit. rate
1.	2001	78 & above	866.86	65.38	566.72	300.14	75.84	54.16
2.	1991	“	688.16	52.21	359.28	328.88	64.16	39.29
3.	1981	58 & above	581.78	41.43	241.03	340.75	56.38	29.76

Source: Census of India, 2001, Govt. of India

Women constitute almost half of the population of the world. But the societal prejudices made them suffer a lot as they were denied equal opportunities in different parts of the world till recently. The rise of feminist ideas has, however, led to tremendous improvement of women's conditions throughout the world in recent times. The well known French Utopian Socialist Charles Fourier (1772-1837) who developed a system of ethical socialism once said, "One can judge the degree of civilization of a nation by the social and political position of its women". An extract from the report of the University Education Commission (1948-49) sums up the need in the following words: "There cannot be an educated people without educated women".

Concept of Women Empowerment

The term 'Women Empowerment' conveys different meanings in different contexts. However, in general it is understood to be a process of consolidating, maintaining, changing the nature and distribution of power in a particular cultural context. It is basically the process which tries to change the nature and direction of those systematic forces which marginalize women.

Empowerment is an active and multidimensional process which enables women to realize their full potential and powers in all spheres of life. It is a process of awareness and capacity building so that women have a greater participation in the decision making process and thus can have a role over the transformational process. Women empowerment as a process of redistribution of social power and control of resources in favour of women was introduced at the third International women's Conference at Nairobi in 1985. The year 2001 was declared as, "Women's Empowerment Year", while formulating policies for female development with a view to reducing inequality between male and female and to bring them at par with men. United Nations High Commissioner for Human Rights has defined empowerment as, "The process of giving people the power, capacities, capabilities and access needed to change their own lives, improve their own communities and influence their own destinies". Claessen and Van Wesemael (1992)⁵ define women empowerment as follows: "Empowerment is a process of women acquiring the experiences, knowledge, tools and techniques to be able to transform their lives and the society. Within this process transformation of existing power relations is crucial".

The National Empowerment Centre Massachusetts (Chamberlin, J, 2006)⁴ have identified the following qualities of empowered women:

1. They have decision making power.
2. They have access to information and resources.
3. They have a range of options from which to make choices.
4. They have assertiveness
5. They have a feeling that the individual can make a difference (being hopeful)

6. They learn to think critically and see things differently. For example:

- a) Learning to redefine what we can do.
- b) Not feeling alone; feeling part of a group.
- c) Understanding that people have rights.
- d) Bring about effective change in one's life and one's community.
- e) Learning skills (e.g., communication) that the individual defines as important.
- f) Growth and change that is never ending and self-initiated.
- m) Increasing one's positive self-image and over coming stigma.

Education: A Vehicle for Women Empowerment

Education is an essential pre-requisite for empowerment of women. It is a basic tool in the emancipation and empowerment of women. Education not only enables women to gain more knowledge about the world outside of her hearth and home but helps them to gain status; self esteem and self-confidence, necessary courage and inner strength to face challenges in life. National Policy on Education (NPE, 1986)¹² observes that, "Education will be used as an agent of basic change in the status of women. Women become empowered through collective reflection and decision making. The National education system will play a positive role in the empowerment of women. It will foster development of new values through redesigning of curricula, text books, training and orientation of teachers, decision makers and administrators".

Education makes the women empowered personally, socially, culturally and economically in the following ways:

1. Personal empowerment

Education is an important and prominent component for personal empowerment of a woman. Education provides women access to knowledge in areas like health care, nutrition and family planning. An educated woman knows her strength and weakness and seeks self improvement and is able to maintain her own morality, personal hygiene, emotional balance and emotional maturity. An educated woman would be able to help children with their school assignments, attend Parents Teachers Association (PTA) meetings and inquire about the academic performances of her children. This will ensure blissful homes, well educated and well-behaved children and contented husbands and endowed nation.

2. Social Empowerment

Education truly makes woman pillars of the society. Moreover, she is able to overcome the social evils, such as the dowry system, sati, early marriage, slavery and abortion of the girl child. Educated woman knows her rights and duties in the society. An empowered woman influences

the growth and development of the society. She involves herself as active participant in various social works and duties through clubs and other woman organizations.

3. Economic Empowerment

Higher education lays the foundation for the economic development of woman. Educated woman are employed as teachers, doctors, engineers, advocates, scientists, police officers and drivers etc. Through their employment, they reach high range of salaries, thereby improving the economic and financial conditions of their families. In the economic sphere, mostly women are engaged in small or large scale business. Also women who are married to entrepreneurs and big time businessmen will be able to help such husbands if they are educated. Furthermore, they can assist their husbands in financing the home and the education of their children.

4. Cultural Empowerment

Culture is an advanced development of the human power, development of the body, mind and spirit by training and experience. Culture is also an evidence of intellectual development in human society or of a particular nation. For that education plays a great role in bringing radical changes in the culture of women. They transfer the changes in culture to the next generation. Education also changes the lifestyle of women throughout their lives.

5. Technological Empowerment

Educated women are seekers of knowledge and information. The information technology and particularly ICT is a tool to help the women in this search. Women have adopted the computer technology, Information Technology and Internet tools with great interest, enthusiasm and courage. There is a growing trend among women to learn and make use of information technology related tools in their daily lives and adopt them as a profession, thereby playing the roles of managers, facilitators, advisors and users and creators as well.

Jo Roland (1997)⁷ mentions three dimensions of empowerment of women through education. They are personal, relational and collective. Personal empowerment includes developing a sense of self and individual confidence and capacity for undoing the effects of internalize-oppression. A primary school girl is the best example for personal empowerment. If our primary schools develop this character in a girl child, they can develop individual confidence and capacity to lead future life. Relational--empowerment of women is possible through education. Educating the house wife and uneducated women through non-formal system of education which in turn, educate there relatives. Collective empowerment is very important for women welfare. Through women groups, Mahila mandals, self-help groups, yuvathi mandals, associations, a collective action for empowerment of women can be taken based on the cooperation and understanding. Thus education would become an important tool for women

empowerment. Mahila Samakhya, a programme of empowering rural women through education, links the concept of empowerment to Mahila sanghas. It views empowerment as a process of affirmation, articulation and emancipation at both the collective and individual levels. Mahila Samakhya tries to empower women through education in a broader sense so as to enable them to become self-confident, articulate, creative, develop abilities to interact with other people, function as a team and draw individual strength and increase their self-esteem and respect.

For overall educational development of women, a vigorous drive for understanding of Universalization of Elementary Education (UEE), retention of girl child in school, reduction in dropout rate and promotion of adult literacy should be taken up on a war footing. Some of special initiatives are also needed so as to ensure empowerment of women such as review of school text books to remove gender bias, re-orientation of school teachers to present gender equality and setting up of Women's Development centre in universities and colleges etc. Figure 2 shows the progress in Girls' education at primary and secondary levels.

Figure 2: Enrolment of Girls at Primary and Secondary Levels of Education

S.No.	Year	Primary Education (%)		Secondary Education (%)	
		Boys	Girls	Boys	Girls
1.	1997-98	62.3	48.0	23.6	15.9
2.	1998-99	62.7	48.2	24.0	16.3
3.	1999-00	64.1	49.5	25.1	17.1
4.	2001-02	63.6	50.3	26.1	18.7

Source: CSO, Govt. of India, New Delhi: 2002.

The schemes of Support to Training and Employment Programme (STEP) for women, Training-cum-Production Centres (TPCs), Rashtriya Mahila Kosh (RMK), Integrated Child Development Services (ICDS) are also making Herculean efforts for empowerment of women. As empowerment of women in a society is the most effective index of measuring modernization and development (Rajawat, Mamta, 2005)⁸, it should be ensured, that at every phase of life, woman be given special attention in terms of school education, higher education, health education, sex education, population education, technical education and education on self development.

Gender Inequality and ICT Integration: Current Scenario in India

The World Bank (2001) report states, "..... in no region do women enjoy equal legal, social and economic rights. Women have fewer resources than men, and more limited economic opportunities and political participation. Women and girls bear the most direct brunt of these inequalities—but the harm ultimately extends to everyone..... Gender inequality persists

because these are supported by social norms and legal institutions, by the choices and behaviours of households, and by regulations and incentives that affect the way economies function”. The report further states, “A strategy to reduce gender inequalities must address these factors: Foremost among the costs of gender inequality is its toll on the quality of human lives. Evidence suggests that societies with large and persistent gender inequalities pay the price in terms of more poverty, illness, malnutrition, and other deprivations, even death. This makes a compelling case for public and private action to eliminate inequality. Public action is particularly important since many social, legal and economic institutions that perpetuate gender inequalities are extremely difficult for an individual to change”. The overall education progress of women after independence has been shown in Figure 3.

Figure 3: Educational Progress of Women in post Independent India

S.No.	Year	% Literate		M/F (%)
		Male (M)	Female (F)	Literacy Gap
1.	1951	27.16	8.86	18.30
2.	1961	40.40	15.34	25.06
3.	1971	45.95	21.97	23.98
4.	1981	56.50	29.85	27.65
5.	1991	64.20	39.19	25.01
6.	2001	75.75	54.16	21.69

Source: CSO, Govt. of India, New Delhi: 2002.

Information and Communication Technologies (ICTs) can be harnessed as an instrument to reduce gender inequality. ICT over the past two decades has played a major role in bridging the gap between the reality of women’s lives and the agreed upon objectives of women empowerment. The concept of gender equality is today a global concern and has acquired a new dimension with the advent of modern ICTs. ICT has a potential to bring development in the status of women. It can eliminate poverty, and empower women.

Access to the new ICTs remains extremely unequally distributed across and within societies. ICT now plays a significant role in research, knowledge and analysis in the field of gender equality and the human rights of women. ICTs are for everyone, and women have to be equal beneficiary to the advantages offered by the technology and the products and process which emerge from their use. According to a report by NASSCOM (National Association of Software and Service Companies, June-July 2010), the number of internet users in India is 5, 700,000 and the proportion of male to females was 67:33. The percentage of total women users of Internet in India increased from 18% in 2001 to 43% in June, 2011 (Sawhney, Neena, 2012)¹⁶. ICT has the

potential to benefit those women who have not yet tasted the fruits of globalization, thereby empowering them to participate in economic and social progress.

The areas in which ICT can put a greater control in hands of women is wide and continuously expanding, from managing water distribution at the village level to standing for local elections and having access to lifelong learning opportunities, and make informed decisions on issues that affect them. In the services, industries of banking, finance, and insurance, women are concentrated at the lower and less skilled employment levels. In India, percentage of women in electronic data processing and in management is very low, ranging from 6% to 12% in India. The Information Technology (IT) enabled service centres offer several opportunities to women and a large number of women are joining the IT enabled service sector (Ramani, S. 2000)¹⁴. A large number of companies such as General Electric (GE), General Motors (GM), American Express, Standard Chartered Bank, Microsoft, OL Time Warner, HP, Dell computers, Prudential Insurance, Morgan Stanley, Mark and Spencer have call centres where a sizeable number of women are employed ranging from 50% to 65%. GE Capital has 40% to 55% women employees in their various centres (Sandhya, Sule, 2003)¹⁷. A study of an International call centre at Pune showed that 59% of employees were women (Dutta, 2003)⁶. Over the last few decades the women enrolment has significantly and steadily increased as the Figure 4 shows. This trend is encouraging.

Figure 4: Enrolment of Women in Indian Higher Education to Total Enrolment

S.No.	Year	Total Enrolment	Women Enrolment	% of Women	M/F Gap (%)
1.	1995-96	65,74,005	23,63,607	36	28.00
2.	1996-97	678,42,598	25,14,511	37	26.00
3.	1997-98	72,60,418	27,22,062	37	26.00
4.	1998-1999	77,05,520	29,32,993	38	24.00
5.	1999-2000	80,50,607	31,12,090	39	22.00
6.	2000-2001	83,99,443	33,06,410	39.4	21.20
7.	2001-2002	88,21,095	35,14,450	39.84	20.32
8.	2005-2006	110,28,020	44,66,348	40.50	19.00

Source: UGC Annual Report, 2001-2002

As per NASSCOM (2004)⁹ estimates, women comprise 20-25% of total number of Science and engineering graduates in the country. However if we look at the number of women enrolment in science and technology, the scenario is not very flattering. As can be seen from Figure 5 there

is less enrolment of women in science and technology, being only 19.90% and 3.75% respectively.

Figure 5: Faculty-wise Women's Participation in Indian Higher Education (2001-2002)

S.No.	Faculty	Enrolment	Percentage
1.	Arts	18,20,134	51.79
2.	Science	6,99,376	19.90
3.	Commerce/Management	5,81,993	16.56
4.	Education	59,394	1.69
5.	Engineering/Technology	1,31,7692	3.75
6.	Medicine	1,23,006	3.50
7.	Agriculture	9,137	0.26
8.	Veterinary Science	3,163	0.09
9.	Law	56,934	1.62
10.	Others	29,521	0.084
	Total	35,14,450	100

Source: UGC Annual Report, 2001-2002

The number of software women professional increased from just 6,800 in 1985 to 850,000 in 2007 (NASSCOM, 2007)¹⁰. In 1993, only 10% of workforce was women in IT sector. In 1988, 18% of IT workforce was women, which was higher than the national average of 12%. In 2003, the proportion increased to 21% and it further increased to 43% in 2007. The participation of women in IT industry is rapidly growing and is expected to go up-to 65% by 2013 (NASSCOM, 2007)¹⁰. Due to IT, women have employment options as flexitime and work at home concept. Mumbai-based “Automatic Technologies”, a BPO (Business Process Outsourcing) that process data allow women to work from home, 20 hours a week.

Over the past two decades, the relocation of labour intensive industries from advanced market economies to middle income-developing economies has increased employment for women in the later, proving the importance of ICTs in empowerment of women and overcoming gender inequality through the use of ICTs. Nath (2001)¹¹ says that, “In the context of knowledge sphere, the issues of gender equality and empowerment of women have become even more significant as women have a strategic role in incubation and transfer of critical knowledge which often forms the blue print of survival for communities to adapt and minimise the risk in advance

circumstances. Women, because of their biological and social roles, are generally more rooted than men in the confines of their locality. They are therefore more aware than men of social, economic and environmental needs of their own communities". Women should benefit significantly from the inroads laid by the ICTs in knowledge networking. Empowerment programme for women should focus on building their skills and abilities to gain insight into the issues related to their external environment, which has impacted upon their life, their ability to express themselves and make formal decisions about their personal and family development.

Employment and Growth Opportunities for Women in ICT and IT Sector

ICT sector has opened new vistas and areas of employment for young women both in small and big cities, such as, data entry jobs, tele-marketing, medical transcription, banking and software companies and in corporate sector. Technically qualified and skilled women are engaged in knowledge networking who perform specific tasks of understanding, compiling analysing, searching, providing value addition and disseminating information etc. Many women are STD/PCO booth holders. The potential of ICTs can be harnessed in the areas such as health, nutrition, telemedicine, farming, distance education, etc., making it accessible for women.

Thus, ICT can be used effectively for providing value-added services to women. ICT provides opportunities to women to learn new skills to do business, to communicate from home. There is a need to develop and try out different models for empowerment of women through Internet and networking. This will also help women to come out of their stereotype roles. ICTs (Nath, 2001)¹¹ offer endless possibilities for women to play a pro-active role and impact on government processes at the local and global level. *Gyandoot* is one of the Internet projects being conducted in Dhar district of Madhya Pradesh, under which 21 rural cyber café or *kiosks* called *Suchanalaya* are connected. This project covers 30 village information kiosks in five Blocks of the district. The entire network of 31 kiosks covers 315 panchayats (village committees), over 600 villages, which nearly covers 50 percent of the district. This portal provides services such as information about farm prices of agricultural products, providing copies of land records, provide facilities to file application for caste, income and domicile certificates, landholders' passbook of land records and loans through e-mails. Women benefit through developing understanding regarding local processes. Women can file complaints through the net, such as poor quality of seed and fertilizer, farming related problems, school related problems etc.

In rural areas, women can take help through *e-Choupal*. Conceived by ITC in June 2000, *e-Choupal* has already become the largest initiative among all Internet-based interventions in rural India. '*e-Choupal*' services today reach out to more than half million women farmers who are growing a range of crops-soyabean, coffee, wheat, rice, pulses-in some 4,500 villages through

770 kiosks across four states, viz; Madhya Pradesh, Karnataka, Andhra Pradesh and Uttar Pradesh). Through '*e-Choupal*', women farmers could access information in their local language on weather and market prices, disseminate scientific knowledge on farm practices and risk management, facilitate the sale of farm inputs and purchase farm produce from the farmers' doorsteps.

In Trichy district of Tamil Nadu, a help line is created for women by an NGO to handle the issues such as sexual harassment, dowry, and domestic violence. This service has aroused active interest among the women as they avoid the social stigma of having to go to a local police station, which also saves them from encountering red tape and corruption problem. There have been other attempts also to use ICTs for empowering women. For example, knowledge networking has helped women to come together and form virtual communities, build and develop issue-based solidarity among themselves to take concerted action and to influence policies. In short, ICTs have improved the economic status of women in some areas.

Despite the creation of ICT-based models for women, there are still multiple challenges to ICTs becoming a potent force for women's empowerment. Many women are engaged in home-making in unorganized sector or informally working from home. There are many women working at home on handicrafts, eatables, sewing, rolling cigarettes, book binding, working in cities as street vendors, working without any contracts or benefits. In some developing countries ninety percent of economically active women are in the unorganized sector of the economy. Now the question is that how ICTs can be harnessed to empower women in the unorganized sector? This is a major area of concern if ICTs are to make any difference in alleviating poverty and the general well-being of women and of their family lives. This is a tough task, as using the ICTs in this sector faces the issues of access, delivery of information, training, local language and content. Low levels of literacy and lack of expertise in technical skills among women also hinders them from reaping the benefits of using ICTs. Moreover, most of the information on Internet is in English which further restricts them from using ICTs effectively.

In order to make ICTs to contribute to women's empowerment, strategic actions are required. They must focus on the development needs of women in general, women in unorganized sector, rural women and special need groups of women. There is need to provide training, opportunities to women in the use of ICTs, provide improved ICTs access for women of all groups/sectors, linkages of ICTs organizations with women's rights organizations. For rural women, there is need to establish ICT access, improvement of ICT access to support business linkages and to include use of ICTs to create markets for their products and services.

Bridging the Digital Divide through ICT Integration in Women's Higher Education: Roadblocks and Prospects

Today women are emerging as leaders in the field of aeronautics, medicine, space, engineering, law, politics, education and business. In the present century, women are entering into the job market in increasing numbers. They are showing their skills even in non-traditional sectors like police, defence, administration, media and research fields. The best gift which women can give to their children is quality education through ICT.

ICT has profound gender implications for both men and women in employment, education, training and other productive and personal development areas of life. In order to facilitate access for women from various classes and sectors, ICTs will need to be located in places which women frequent and to which they have open and equal access, such as health centres, women's NGOs, women's employment centres and perhaps even places of worship. If women are able to understand and experience the benefits of ICTs, they will be quick to use such technologies.

Government Education Department has to take some hard decisions on establishing at least 30 to 40 computers in each and every school in all the urban and rural blocks and panchayats. Infrastructure facilities are one of the major challenges in the implementation of ICT programmes, especially in rural schools and villages. Providing Internet connectivity in each village and rural blocks is a major problem being faced in the installation of ICTs and in running ICT programmes. But in the initial period, without Internet connectivity, also some training and information through computer can be provided effectively, especially in rural areas. Nowadays use of CD (Compact Disk) is not a major expensive and technical aspect. All the developmental programmes related to empowerment of women, have been written in the CDs and also installed on computers. A CD-ROM, "*Rural women in Africa: Ideas for Earning Money*" is an example of a deliberate effort to increase women's participation in the use of ICT and ICT related tools.

There are the government training institutions for ICT programme which provide on-hand training for women. All practical and theoretical works of the experts from different fields have to be collected in the CDs and displayed in schools and colleges through computers. Here the challenge is computer knowledge of the instructors who are working in these schools and colleges. So the instructors selected must have basic knowledge of various technologies related to development aspects.

One of the important aspects is involvement and interest of teachers, education departments and the end user of the students' community in women colleges and girls' schools. These two things can be achieved through continuous motivation and through provision of better awareness about the importance of the ICT Programmes. Another major challenge is monitoring and

evaluation of the overall Programme. This has to be done by the concerned school education department. The government can appoint suitable persons to monitor the successful implementation of the ICT Programmes in girls' schools and women colleges. But the person should have sound knowledge about computer skills, technical knowhow on various fields, and knowledge of local resources and their management.

The digital empowerment of women and involvement of self-help groups all over the country would be a successful strategy to link the Indian villages with global vision. Recent important national policy documents have recognized the gender implications for the new technologies. The "*Platform for Action of the Fourth World conference on women*" states that, "women should be empowered by enhancing their skills through increasing knowledge and access to information technology".

Since ICT is new in rural areas, it would be appropriate to establish institutional networks at Panchayat level to facilitate in-service training of teachers and Panchayat officials such as Block Education Officers to ensure optimal utilization of ICT resources. State Institute of Education and Training (SIET) could provide leadership at the state level which can have network with districts and district level lead institute can develop network with Panchayat level. These institutions, if provided with adequate funding and professionally trained staff, can effectively take responsibility of capacity building at different levels so as to ensure absorption of ICT trained women.

The Self Employed Women's Association (SEWA) first established Technology Information Centres (TICs) in eleven districts of Gujarat. Members of SEWA are able to access government schemes and tap into new markets. ICT-Enabled Social Net Project explored the use of ICT as an empowerment tool for women in India through the establishment of an ICT Seva Kendra. The Seva Kendra caters exclusively to women, in an effort to encourage participation, build capacity and support their work towards social transformation. ICT Seva Kendra focussed on email, word processing and database management to redress the problems faced by self employed women, Self-help group members and elected representatives of local self-government bodies.

Use of Internet together with the capacity building processes will catalyze the process of mobilization, organize women for action and lead to their empowerment. For further enhancing the digital empowerment of women and bridging the digital divide between have and have-nots, the Government of India has created six rural women technology parks, which are located in Pondicherry, Kerala, Maharashtra, Madhya Pradesh, West Bengal and Tamil Nadu. These rural women technology parks will showcase technology options, provide training as well as would provide backward and forward linkages to rural women for income generation activities based on

local resources. Technology areas, which will be addressed in these women technology parks, are post harvest processing, soil fertility management, medicinal plant cultivation and semi processing, nursery techniques, aquaculture and energy. Showcasing drudgery reduction devices and women's health will also be a major focus of these centres.

We can replicate examples from Ukraine and South Korea, as these are suitable models for improving socio-economic of women in India. The Ukraine model can be successfully replicated in our conditions for empowering women. In collaboration with an NGO, the council for women farmers and the state committee of Ukraine for entrepreneurship development, UNDP has started a tele-centre project in Ukraine. This project applies ICTs to agriculture and farm management in support of women farmers who identified lack of information and networking tools as the major obstacles in order to become successful entrepreneurs in a new market economy. In this project, women farmers will be provided with computer and Internet access by eight tele-centres managed by the council and will be trained in computer usage, which will help them build capacity in their business goals. The trained women farmers will be able to access information *via* the Internet, such as commodity prices, law and regulation related to agriculture and best practices in farm management. Effective utilization of computers would promote communication, networking and collaboration among women farmers and with other interested organizations such as state entities, the private sector, NGOs and mass media, easy access to information and networking will facilitate and enhance participation of women farmers in decision making processes in the dynamic transition to a market economy in Ukraine. Through a series of IT training, women farmers will also acquire skills to garner local knowledge, create and publish on-line content in their own language, and apply them in conducting e-commerce, with a view to increasing the income level and enhancing investment. The Ministry of Labour, Government of Korea, runs computer training for unemployed women. Ministry of ICT of the Republic of Korea has trained more than one million housewives in computer and Internet use. They also have a project to enhance ICT skills of girl students from elementary through high school. Their Ministry of Gender Equality has organized programmes at twelve Korean Universities for women who want to work in an e-business or to start Home Office. Asian Pacific Women's Information Network Centre (APWINC) at Soomyung University trains women to work in IT, and in their own businesses. The Ministry of Agriculture and Forestry encourages the use of ICT by women farmers through onsite and mobile computer education and technical support services. The website also operates a shopping mall for agricultural products.

Thus, ICTs can be harnessed as a potentially powerful tool for extending educational opportunities to women, both formal and non-formal, to previously neglected constituencies---

scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enrol on campus. Women who are confined in domestic and daily household chores can take up distance education and on-line course available not only on the Internet but also can benefit from the Open Universities such as IGNOU (Indira Gandhi National Open University), New Delhi or BRAOU (Bhim Rao Ambedkar Open University), Hyderabad etc., and thereby would be able to complete their education without leaving their living places. Therefore, access to remote learning resources feature would be able to help women teachers and girl students, who till now were relying solely on printed books and other materials in physical media housed in libraries for fulfilling their educational needs.

Conclusion

In the present context of rapidly changing world, there is no other potential tool other than ICT for societal transformations, empowering the most deprived section of the society, that is women. The advent of globalization and ICT has changed the landscape of the concept of work, especially for women. Knowledge and information are becoming increasingly important factor for production, services, empowerment and a broad range of social activities at the global, regional, national and the local levels. It is expected that more women will enter this sector as the new emerging trend could allow women to work from home with Internet and telecom connectivity. Flexi timings and work at home would enable more women to join the labour force. The concept of part time work will also go a long way in helping women. All these factors will contribute in benefiting women in the long run.

ICT offers substantial possibilities to improve the lives of women and their families in developing countries. While many examples exist of how women have used the new technologies to improve their businesses, create new business or find new employment opportunities, large majority of women in developing countries are still excluded from the digital economy. There are certain barriers in bridging the digital divide, the most important being infrastructure, which is a pre-requisite for the real access to ICT. This implies that a vast range of steps are to be taken both by women themselves as well as policy-makers, so as to abridge the gender-digital divide. These are: a) A key strategy for women's empowerment, especially in marginal and poor communities. Unless the technology is made locally accessible, relevant content is made available and women are trained to access the information, they can be hit strongly by the digital divide. b) Women need to become active promoters of the use of ICT and enhance their capacities in IT training and skills. c) Women also need to become more involved in ICT-policy making and their related

developments so as to ensure that woman's needs are incorporated in policies related to infrastructure, access training and education. d) Policy-maker needs to mainstream gender in the complete range of policies, ICT and e-commerce strategies with the objective to enhance women's participation in the digital economy and thus increase national capacity and achieve larger economic development and growth.

To help women, policies should be undertaken so as to increase women's access to computers and Internet. Efforts should be directed towards improving women's skills and usage of new technology. Steps should be taken to encourage women employees involved in IT and ICT sectors. Noteworthy examples are companies such as Infosys, Wipro and I-flex of India. The Infosys Women Inclusivity Network (IWIN) conducts networking and mentoring sessions along with initiating policies, benefits and training via the group and there is a similar initiative within Wipro, called Women of Wipro.

Thus, to conclude, it can be said that, there is a need to develop ICT and ICT related policy, which is engendered to address the empowerment of women, encourage regional ICT trade, to familiarize women with ICTs and also involve women in making this policy a success. Barriers in the use of ICTs by women for their empowerment should be removed with strategic planning, leading to action-oriented desired results. The digital empowerment of women is thus, a vital element in making and advancing healthy and vibrant economy of any country. Therefore, empowerment of women digitally is the prerequisite to transform a developing country into a developed country. In the end, I would like to quote the words of Pandit Jawaharlal Nehru.

Jawaharlal Nehru once said, *'To awaken the people, it is the woman who must be awakened. once she is on the move, the family moves, the village moves and the nation moves'*.

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