

## DESIGNING E-LEARNING PROGRAMS FOR RURAL SOCIAL TRANSFORMATION AND POVERTY REDUCTION

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### ABSTRACT

While the conventional education system with different forms of E-learning and rigid academic instructive curriculum could not bring desired changes in specified timeframe work at rural level in the targeted communities and groups, a multipronged sociological approach with a sociable and flexible curriculum in new E-Learning programs becomes need of hour. The impact of socializing influence of these E-Learning programs should be properly exploited to motivate and inspire the rural target groups. The benefits of E-learning then become extensive and soon integrate with the needs of the lower strata of the society in order for achieving a rapid social transformation in the lives of the farmers, vocational groups, artisans and small income self help groups comprising women, girls and physically challenged. The paper suggests a number of new generation E-Learning programs as strategies of development communication with a promise of high returns for the industry for its investment in these programs with socially relevant messages and media convergence.

**Keywords:** E-Learning, E-Commerce, E-marketing, E-bay, E-business, one-on-one communication, mediated communication, media convergence, internet banking, on line trading, futures trading.

### INTRODUCTION

Though E-learning was an outcome of technological innovations that computer science churned out in the last one decade, its sociological significance and relevance to the society are far reaching than ever. It is no longer a mere soft ware or lexicon of Computer Science professionals purely delving into technological features and its maneuvers.

In India where computer penetration or internet penetration is 40, 000,000 as against population of 1,129,667,528, coming to 3.5% (lowest penetration among the top 20 Users in the world) as per IWS as on Nov 2006, (<http://www.internetworldstats.com/top20.htm>) and literacy per cent at the rural level being 44.69% as against the urban 73.08% (<http://www.censusindia.net/literates1.html>) the need to diversify the application of E-Learning could hardly be over emphasized.

So far, E-learning is limited to the role of aiding education both as self-learning as well as distance learning in formal sector. As such a number of other terms like *online-learning, virtual learning, distributed learning, and network and web based learning* are also synonymously used as E-learning though all are directed towards educational processes (Som Naidu, 2006: 11). But Som Naidu opines that the term E-learning is much more than all these and encompasses a broader framework of learning processes relating to various fields (Soma Naidu, 2006: 11). He therefore defines "E-learning" as a process arising out of an 'electronic system' incorporating all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices" (Som Naidu: 2006: 11).

Given the reality that as of now its (E-learning) application is more or less found in educational sectors like formal and distance mode, one would still wonder at the slow pace of progress being achieved in India in this field against the backdrop of low literacy rates mentioned above (<http://www.censusindia.net/literates1.html>).

Most of the distance mode offered at the higher education level in fact was limited to supply of print materials, in addition to playing of audio visual tapes at some select centers. Despite collecting heavy fees through distance mode education, there is no provision of supplying Compact Discs (CDs) of the curricular content even. Many Universities just ignore this important right of the students to two-way communication. A little heed has been paid to build up two-way communication at any level between the student and the teacher who were spatially separated to offset the teacher-student interaction in a conventional process though that is what the intended purpose of e-learning through audio visual education and playing of tapes in distance mode (Ortner, G. E, 1992: 148-170).

Though the statistics show year-wise increase in the number of enrolment for the distance education<sup>1</sup>, the quality assurance due to lack of two way communication is at stake. ([www.education.nic.in/cd50years/g/52/4J/524J0601.htm](http://www.education.nic.in/cd50years/g/52/4J/524J0601.htm)). Regretting the current trend in higher education, MC Paul observes that, "India has over 8, 88,000 educational institutions consisting of about 3,300 Universities/Deemed Universities and institutions with over 9.28 million enrolled students. As the new century unfolds every passing day and the literacy rate, India is witnessing a surge of aspirants for getting access to higher education as never seen before. The new generation is craving to enter into a suitable profession or career to get more out of life. But they feel that the State and Centre run institutions pose impediment in the absence of much needed reforms in terms of much-needed courses, quality up-gradation, equity and access. So the system cannot possibly play much desired catalytic role in the development process" (M.C. Paul, 2005: 2).

Thus the self-learning through E-learning is limited only to certain select private schools/institutions (such as Bishop Cotton, Loreto Convent, etc.) and a few privileged Central Government Schools (such as Kendriya Vidyalayas/central universities) where the learning happens through privately prepared E-packages of curriculum by the private publishers or industrial houses or through Internet or local network.

Though all States in the Union of India have introduced E-learning and Computer education at formal school/college level, many schools in rural and urban India suffer from lack of technological support including power failure, poor telecommunication connectivity, besides lack of expert guidance.

Even non-governmental sectors like Infosys Foundation<sup>2</sup> ([http://www.infosys.com/infosys\\_foundation/index.htm](http://www.infosys.com/infosys_foundation/index.htm)) and Azim Premji Foundation<sup>3</sup> (<http://www.azimpremjifoundation.org>) have been offering computer based education and self-learning technology (Computer Aided Learning-CAL) under public-private partnership. Yet the overall scenario does not appear to be so much radically different compared to expected targets though positive outcomes could not be overlooked. For instance commenting on the performance of Sarva Shiksha Abiyan (SSA), the Comptroller and Auditor General of India (CAG) observed that, "Even after 4 years of the implementation of the scheme and utilization of almost 80% of funds available with the implementation agencies, the SSA 's revised targets to enroll all children in schools, education guarantee scheme, alternative schools, back to school camps by 2005 was not achieved as 13.6 million (40% of the total 34 million children out of school) remained out of school in the 6-14 age group". (C. Jayanti: 2006). There are 48 districts in the country where more than 50,000 children are out of school, the highest being in Bihar (20), UP (15) and West Bengal (4) according to the World Bank Report. The CAG also pointed out that out of every thousand children; nationally 71 children are out of school. "Clearly a lot requires to be done", says Jayanti (2006).

On the contrary, the internet has been fully exploited by the urban and semi-urban groups for both educational and socializing purposes. Between the two—education and socializing—the youth and elite groups preferred internet for socializing purposes more than education as they have access to conventional and formal education and have little to do with self-learning through E-Learning. In fact the socializing influence of internet at urban/semi urban level in the form of E-Chats, E-Conferences, E-mails, SMS (Short Message Services), Mobile and Net Phone 2 services-- with the additional technological inputs like web camera/video play on--has more appeal and promise as a source of inspiration to motivate the rural target groups such as youth, farmers, artisans, carpenters, weavers, women, girls, physically challenged, deprived and other Self Help Groups (SHGs or Cooperative Societies) to quickly veer round to the demands of the global changes both in terms of education, awareness and enrichment of their skills besides economic prosperity.

Further, whatever E-Learning programs were designed so far for the rural youth and other target groups, they were largely academic in content lacked in flexibility and sociability and operational as offline.

In other words, the messages inherent in the content did not offer a greater hope, promise and horizon for the better tomorrow mainly due to lack of sociable component such as lack of E-mails, E-Chats, E-Conferences on line services which facilities were available to the urban youth. A detailed discussion on how to generate on-line E-Learning programs with modules having components of sociability and socialization with messages of social relevance, human face and promise for a new hope and life using multimedia and media convergence would be given later in this article itself.

Suggestions like setting up E-Learning Centers, E-Information Centers and E-Life Centers as a strategic step to address the rural education to meet the Millennium Development Goals were offered earlier also. (Pradeep Kumar Misra, 2006: 165). The suggestion was based on the fact that there is an ongoing rapid expansion in providing telecommunication facilities on the rural front of India and in the coming years these centers, given the fact the State recognizes the importance of these centers in revitalizing the rural youth and their needs, would begin to offer the desired sociability and flexibility to the rural target groups to enhance their living objectives and goals.

At this time, the rapid increase in the number of internet cafes/connections in the Urban and semi-urban areas coupled with manifold increase in the internet users (other than those having home connections) has put India in the World's fifth place among the twenty toppers though in terms of connections, India figures in the last but one just before Indonesia (<http://www.internetworldstats.com/top20.htm>). Along the sidelines of internet growth, the mobile phone services have also been growing exponentially with more and more mobile service players like AIRTEL, HUTCH, IDEA, CELL ONE, BSNL, ITATA INDICOM, RELIANCE, etc. spreading their net work in the urban and semi urban areas. Where as the teledensity in the Urban and semi-urban areas has increased to 40% since independence, the rural teledensity is still dithering around 2% that is what it was at the time of independence (Pragya Singh: 2006). Unless, this scenario changes, any effort to reach the rural target groups does not yield fruitful results. This is the major bottleneck in India's rural education and social transformation. In view of the large scale establishment of mobile phone service towers both by the BSNL and private providers, besides launch of new INSAT 4 C, a hope lingers that the rural India soon gets connected to the communication highway as much as the urban and semi-urban centers today. It, however, required a lot of investment and expansion under public and private partnership zone wise.

### **TWIN CHALLENGES**

Against the backdrop, two important challenges emerge. One is that the Government (The Ministry of Human Resource and Development,UGC, etc) and the Non-Governmental Organizations (Azim Premji Foundation, Infosys, etc) themselves could not bring a sea change in the rural education and social transformation due to lack of i. infrastructure ii. funds and iii. Expertise and motivating approach is to rope in the rural target groups in larger numbers. It needed roping in many more bigger players probably some more big business houses to meet the challenges in these areas. Second, the present approach to E-learning based educational programs meets only the needs of the urban and semi-urban and privileged groups but not the under privileged and deprived as is the requirement currently and for the next two decades. It therefore required a multipronged proactive approach with a human face coupled with socio-technological approach to motivate the rural target groups to usher into social transformation which ensures economic upliftment, living with dignity, honor and better attitudes and habits.

In fact whatever the e-learning programs currently offered as Media Education through print media (on websites of the news papers) as well as Media Channels including the Edusat run by Indira Gandhi National Open University (IGNOU) in collaboration with HRD, Indian Space Organization (ISRO) Center for Educational Communication (CEC), Eenadu TV (ETV), Doordarshan (India's Premier National Television Channel) have met only the limited requirements of rural India. Whereas Edusat programs are purely curriculum based for rural students, the ETV beams agriculture programs both in the morning and in the evening as a measure of commitment as much as Doordarshan does as a government body. They deal with sowing, tilling, rearing of crops, besides use of pesticides. They also offer advice on the appropriate use of pesticides to curb seasonal pests.

The programs range from pig rearing to fishing, horticulture to floriculture and cultivating oil rich crops such as palm oil. So does Doordarshan (Regional Telecasting centers) in conjunction with State agriculture university official research on these issues.

But when it comes to the range of needs including support price, soils, climatic situations, water potential, pattern cropping, marketing, futures trading etc, these are no way sufficient. Further, other than farming communities, there are many other vocational groups, artisan communities, weaving communities, sculptors, interior decorators, self-help groups, physically challenged, women, girls, aged citizens and deprived whose needs are not met with the any of these programs currently and there is big void on the rural front. Hence, there is a need for designing entirely different types of E-learning programs that cater to the holistic needs of the rural target groups. In that sense the present understanding and concept of E-learning as rightly pointed out by Som Naidu (2006) extends beyond formal learning experience and activities.

The International Commission on Education for Twenty First Century in its recent report titled " Learning: the Treasure Within", has identified four pillars of learning: learning to know, learning to do, learning to live together and learning to be (Delors Commission, 1996). Quoting the report, M.C. Paul (2005) writes that the above processes may be facilitated by instilling the following capabilities in an efficient, effective and excellent manner.

- to think logically, analytically, critically and laterally
- to make a healthy and honorable living, employing learning /occupational skills and work experience
- to realize one's potential for self-development In terms of physical, emotional, intellectual, aesthetic and moral attainment through education and experience; and
- to acquire a discriminatory capability to appreciate, imbibe and balance emerging values concerning areas of sustainability, ecosystems, development with equity, civility, harmony and cultural pluralism (Paul M.C, 2005).

While dealing with "How to reduce India's rural distress", Daniel J Gustafson, Representative of India for Food and Agricultural Organization, wrote that, '....The third emerging area is promotion of experience and knowledge sharing particularly by those who historically have not participated in UN-sponsored forums. An example is the UN's Solution Exchange initiative that connects for problem solving through *e-mail groups and periodic meetings*. Another example is the interaction between farmer groups in India and Kenya. Each side has complementary strengths and experience in micro-credit and in taking on agricultural improvement through group learning experiences. Putting them together opens up technical cooperation in an exciting new way. This approach also applies to work by NGOs on dry land agriculture in the Deccan Plateau and a new South Asian partnership with National Dairy Development Board for pro-poor livestock development" (Daniel J Gustafson: 2006).

Daniel Gustafson's article brings to fore to important considerations. One is the need to offer the access to E-learning programs for farming communities and the other is extension of such programs to other target groups as well as a logical offshoot of the former.

The recent World Congress on Communication for Development held in Rome, Italy (Oct 25-27, 2006) in its first draft put forward for open debate held that, " Communication for Development and social change is more than satellite television, community radio, mobile phones, ICTs and the internet. Certainly, it can call on all these resources.

However, at its heart it is about individuals and about employing the most appropriate methods and tools to empower these individuals to set their own agendas and achieve their own defined goals”.

The report further stated that the communication for development therefore, utilizes the society’s entire communication system including interpersonal, social, community, organizational networks as well as conventional and electronic media in a communication environment that underpins knowledge and media accessibility, content diversity and good governance. As such the report recommended i. a free, independent, pluralistic and responsible media system through which open dialogue and debate can occur, ii. Broad public access to a variety of communication media and channels, as well as a regulatory environment that promotes pro-poor licensing for local radio and low cost universal access to internet and telephone services.

The present paper thus aligns itself with the participatory model ( Freire, P: 1983, Mefalopoulos P, 2005) which otherwise broadens the diffusion model (Rogers, E.M, 1962, 1976) and encompasses all the four laterals of the Communication for development such as i. the use of culturalist view point, ii the use of an interpretative perspective, iii. the use of integrated theories and methods, and iv. to show mutual understanding and attach importance to formal and informal intercultural teaching, training and research . World Congress on Communication for Development held in Rome, Italy (Oct 25-27, 2006: 6). As such any strategies of E-Learning for the future should be diffusible, integrating, enabling the local communities to identify their own needs and problems in a problem solving approach using all the available communication systems such telecommunications, Internet, mobile phones and E-learning packages (networked or local) to operate synchronously and asynchronously.

#### **DESIGNING AND DIFFUSION OF NEW E-LEARNING PROGRAMS**

To address the twin challenges mentioned in the foregoing, the following E-Learning programs are to be developed for the next two decades.

- E-Learning Strategies for better Farm Practices for Agriculture/Horticulture/Fishing/Poultry/Dairy
- E-Learning for better marketing strategies for Agriculture/Horticulture/Fishing/Poultry/Dairy
- E-Learning Strategies for innovation and diffusion in Sculpture/Art/Carpentry/Architecture
- E-Learning Strategies for innovation and diffusion in Weaving
- E-Learning Strategies for innovation and marketing for local Self-Help Groups (SHGs)
- E-Learning Strategies for innovation and conserving Environment, Health, Hygiene and Sanitation, Women and Child care
- E-Learning strategies for attitudinal changes towards Savings of Income, Investment, Share trading, Futures Trading and one’s own economic development and sustainability.

#### **Designing the Course and the Content modules**

In so far developing the course and the content for a viable and lasting E-Learning program, the methodology suggested by Badrul H Khan and Vinod Joshi in their article titled, “E-Learning—Who, What and How? (2006) appeared to be holistic in the sense it involved—People—Process—Product as a continuum—(P 3 model) for creating good quality e-content and deploying the course on the server and maintaining it.

The article also referred to preparation of modules keeping the people –the target group—in mind which is very relevant for the participatory model. The model also offers scope for interactive process of E-Learning. Similarly the modular development for content was illustratively explained by Som Naidu (2006) in his book on E-Learning entitled, "A Guidebook of Principles, Procedures and Practices E-Learning". For the designing of the above E-Learning programs and for their diffusion, the models suggested here are enough for the present.

### **Media Convergence**

Since it is conceived that the E-Learning programs suggested should not be merely instructive, academic and staid the wider approach to the E-Learning programs must have media convergence such as access to Telephone, Television, Radio and Print Media. Whereas Internet access through Broadband either through BSNL Phone (Bharatiya Sanchar Nigam Limited, a Government of India Service Provider) or through private players like (TATA Indicom or Reliance Phone services) is an important medium to space the media convergence, the other services associated with these media like advertising and generating messages add new life to the target groups.

For instance, the farmers committing suicides do not have information from any sources that can possibly help them overcome distress both psychologically and financially. A self-learning E-Learning program, in group or in single, synchronous or asynchronous, on an interactive medium like internet (on line) can place the advertisements of NGOs, Financing Micro-credit organizations, help lines from counseling organizations for the socio-psychological counseling. Further provision of E-mails, E-Chats, E-Conferences would place the target groups in addressing their issues concerning soil factors, water potential, agriculture, irrigation, marketing, futures trading, better pricing strategies, the confidence to bargain for a higher support price, global trends and prices for their commodities. This is what precisely Daniel J.Gustafson (2006) suggested as an important strategy for removing rural distress. Mere provision of curricular instructive material under self-learning programs through E-Learning (offline) will not redress the rural distress.

### **Low Cost Technologies, Marketing Strategies and Financing**

The industry of soft ware as well as telecommunications has a lot of promise for high returns in the rural development and social transformation.

- The Council of Scientific and Industrial Research (CSIR) has brought out a version of the low cost computers just for 200 USD (Rs.10,000) which can revolutionize the farmers' or other target groups life in the rural India. Many software organizations like HCL (Hindustan Computers Limited) quickly brought out the versions into market. But mostly the marketing remained confined to urban or semi-urban areas. The need of these computers is actually very high for many farming communities and self-help groups at the rural level. It means the marketing sectors of these soft ware companies have not thought the need to market them at the rural level for various reasons the most important one being lack of enthusiasm from the rural populations. But the industry has to come out of this stereo typed imagination and plan for suitable marketing strategies. When the rural population is surging ahead in watching cable TV channels with ever increasing connections on the rural side, one does not see any reason why soft ware industry could not penetrate the rural markets. With appropriate credit financing schemes, the rural sector turns out to be a boon for the soft ware industry.

- Many micro-as well as macro credit financing companies like GE Countrywide, Citi Financial Services, Bajaj, Sundaram Financial services etc was offering finance under the hire-purchase scheme for various needy people. The Banks both private and public could offer through their own outlets or through lead-banks such loans to the target groups at rural level.
- Similarly the fast spread of Telephone communication and internet is another pre-requisite. Whereas the Government of India is doing its best, the other service providers like Reliance, Tata Indicom, Idea, Hutch and Airtel Mobile services should plunge into strategic planning and segment the rural marketing zone for rapid spread of telephone services, be mobile or landline. The World Bank Institute's "Virtual Souk" project for rural artisans in the Middle East and North Africa and the Gyan Ganga Telecentre Project, Gujarat India (with the participation of private organization n-Logue using WILL phones (Local loops) technology are some of the best examples of how low cost ICT technologies helped to revolutionize the lives of the rural communities in getting the best price for their products through e-commerce, e-education (The World Congress on Communication for Development, 2006) .

The three facets concerning the designing and developing E-Learning programs for the future for rural social transformation and poverty reduction are concerned with heavy stakes for the industry both in the public and private sectors. At a time when the country is marching ahead with the second generation economic reforms and the GDP soaring as high as 8.5% annually, India's rural economy has to be better geared up with the advanced communication network and appropriate low cost technologies. This is the outcome precisely expected of globalization and the benefits of World Trade should reach the rural target groups as a first priority rather than urban based industries. When the industries from across the world are entering Indian markets, the first priority for the Governments of the States and the Centre to keep the rural India as a promising business expansion centre not the urban or semi-urban India which is already over populated and expanding further in to slums due to incessant rural migration. Such a development is lopsided and is not healthy phase for a developing and aspiring nation to be a world economic force by 2020.

## CONCLUSIONS

In the backdrop of the above analysis and discussion, it is very important that both the industry and the government in India take a greater role with the Media, ICT and new generation of flexible and sociable E-Learning programs for the rural target groups at the centre of their expansion programs. Unless the new generation of E-Learning programs address totally themselves to the rural issues including marketing, support price, micro-credit financing, better forms of living, bringing a latitudinal change in the habits of the rural lives of the people, the development does not become sustainable.

### Notes of Authors

#### Growth of Distance Education

School Level: Correspondence courses at secondary level were started in 1965 when the CABE recommended such courses with the objective of improving the academic standards of private students. The Board of Secondary Education, Madhya Pradesh was the first to start correspondence courses in 1965.

The first open school was established in New Delhi in 1979 in order to provide distance education to school drop outs enabling them to enroll for the secondary course (Class X). The open school started offering senior secondary courses (class XII) in September, 1988.

In November 1989, this institution was upgraded to the ' National Open School (NOS), an autonomous institution of the Central Government with the objective of providing relevant, continuing and developmental education to prioritized client groups as an alternative to the formal system. The states of Punjab and Andhra Pradesh have also established Open Schools recently. Maharashtra is in the process of establishing an Open School.

In 1985 the enrolment at the Secondary and Senior Secondary stage through correspondence was 62,962 which was just 0.31% of the total enrolment at that stage. The situation has improved considerably since the establishment of the National Open School which enrolls about 50,000 students annually. Tertiary Level: Distance Education for higher education in India was initiated in the form of Correspondence Courses in 1962, in response to the ever- increasing demand for higher education which could not be met by the conventional system. The Delhi University established a School of Correspondence Courses and Continuing Education in 1962.

Encouraged by the success, the Education Commission (1964-66) recommended the expansion of correspondence education for various purposes. Consequently, the University Grants Commission (UGC) formulated guidelines for introducing correspondence courses in Indian Universities.

Three more Institutes of Correspondence Studies were established in the late sixties. Twenty one more universities introduced correspondence programmes during the seventies. In the early eighties seven more universities started institutes of correspondences studies.

At present there are 45 universities including four deemed universities offering correspondence programmes in the country. During the last fifteen years the annual growth rate of enrolment in open universities and the institutes of correspondence studies attached to conventional universities has been appreciably higher than in the conventional universities and in 1990-91 it was approximately 600,000. The proportion of students enrolled in distance education has steadily increased from 2.6% of the enrolment in higher education in 1975-76 to 11.5% in 1990-91.

### **Infosys Foundation**

Established by the Giant Corporate Software Institution in Bangalore, the Foundation offers an edge to deprived and rural students, through its activities. In what is one of the largest rural education programs in the country, the foundation has donated 10,200 sets of books in Karnataka alone, and in Andhra Pradesh, Karnataka, Orissa and Kerala, under its Library for Every Rural School project. Through this program, the Foundation has set up more than 10,150 libraries in rural government schools. A minimum of 200 books, depending on the strength of the school, is provided. Each set has around 200 to 250 books. The cost of each set ranges between Rs. 2,000 and Rs. 3,000. Books on various subjects, including science, history, mathematics, general knowledge, grammar, literature, geography, vocational training and fiction have been donated to cater to the interests of students in all age groups.

To simplify the standard of computer education for students in rural areas, a separate book has been written and is being distributed under the library project. This book has also been translated into Hindi, Tamil and Telugu. However, the donations and contributions are not commensurate with the profits this giant body amasses, besides obtaining concessions from the Government.

### **Azim Premji Foundation**

Established by WIPRO, a giant soft ware corporate body, with Bangalore as Head quarters, the Foundation caters to the needs of deprived groups in education at various places in different states in the entire country: i. Offers Computer Aided Learning (CAL) in Tamil Nadu and Rajasthan ii. Learning Guarantee Program in Uttaranchal, and Rajasthan. However, the donations and contributions are not commensurate with the profits this giant body amasses, besides obtaining concessions from the Government

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## REFERENCES

- Azim Premji Foundation (2006). <http://www.azimpremjifoundation.org>
- Badrul H. K and Vinod. J. (2006). E-Learning—Who, What and How? *Journal of Creative Communications*. 1:1 (Sage Publications).
- Census (2006). (<http://www.censusindia.net/literates1.html>)
- Daniel J G, (2006). How to reduce India's rural distress Deccan Chronicle in "Meanwhile" Column Oct 31. (Karimnagar Edition).
- Delors Commission Report, (1996).
- Friere P (1983). *Pedagogy of the oppressed*, Seaburg Press, New York.
- Infosys Foundation. [http://www.infosys.com/infosys\\_foundation/index.htm](http://www.infosys.com/infosys_foundation/index.htm)
- IWS (2006). <http://www.internetworldstats.com/top20.htm>
- Jayanti, C. (2006). Mid term report card: Average, Oct 7, *Indian Express*.
- Mefalopulos P, (2005). "Communication for Sustainable Development: Applications and Challenges" in Hemer O and Tufter, T (Eds). *Media, Communication and Social Change: Rethinking Communication for Development*. Buenos Aires: CLASCO and Nordicom.
- NICNET (2006). [www.education.nic.in/cd50years/q/52/4J/524J0601.htm](http://www.education.nic.in/cd50years/q/52/4J/524J0601.htm)
- Ortner, G. E. (1992). Does two way communication require a new distance education technology? in: G. E. Ortner, K.Graff & H.Wilmersdoefer (Eds) *Distance Education as two-way communication*. Frankfurt am Main, Verlag Per Lang, 148-170.
- Paul M.C. (2005). Higher Education in India and the Need of Quality Assurance Mechanisms for Developing a Knowledge Scoeity, *University News*, Association of Indian Universities.Vol 43 (21) May 23-29. 2.
- Pradeep, K. M. (2006). *E-Strategies to support rural education in India*. Educational Media International (Routledge). Vol. 43 No. 2. 165-179.
- Pragya S. (2006). Ring Tone's reality check: India Cell Phone story long way to go. Sept 19, *Indian Express*.
- Rogers E. M. (1976). *Communication and Development: Critical Perspectives*. Beverly Hills. Sage.
- Rogers E. M. (1962). *Diffusion of Innovations*. New York Free Press.
- Som Naidu. (2006). *A Guidebook of Principles, Procedures and Practices E-Learning*. CEMCA, 11.
- The World Congress on Communication for Development (2006). Communication for Development—Making a Difference, (Oct 25-27). Rome, Italy.