

2.7 Globalisation, e-Learning and Development - 2006

Abstract

Information Technology is a driving force that is responsible for creating globalization.

The ICT has helped to bring people and places together and offered innovative and entrepreneurial opportunities to individuals and groups to develop and prosper. This would need moving towards horizontal, participative and collaborative alliances and partnerships with a view to create a new world social order.

Development of civilization is closely related to learning and education system..

The emergence of highly networked society, caused due to revolutionary changes in IT, is developing new paradigms of education.

By using the processes of virtualization, digitization and customization – personalization, it is possible to establish virtual educational institution (s), with distributed campus having infrastructure and other necessary facilities.

The development of a new paradigm in using ICT is to develop demand driven, need-based education and learning system. The whole shift is to the process management with appropriate inputs, throughputs and outputs and outcomes.

The Indian system of education, as a whole, is far from being of high quality and competitive in global context. What is needed is a free space for new paradigm development; opportunities for relating programs with institutions, industries and communities, development of technology mediation with mass-personalisation and strong linkages with R & D. in India for making education knowledge intensive and development – centric (By = CGV)

* Globalizing Education Perceptions and Processes (IIE Pune 2005)

Introduction :

In an event organised by the Commonwealth of Learning (COL) in May 2005, COL's President and CEO, Sir John Daniel posed a question about the relevance and need of COL in the present context. The COL is an intergovernmental organisation established by the Commonwealth Heads of Government in **1989** to encourage development and sharing of open **learning**/distance education knowledge resources and technologies (www.col.org). During the last 15 years, the Open and Distance Learning (ODL) has been accepted by many Governments and education institutions as a credible mode of education. It has grown very rapidly with the adoption of Information Communication Technologies (ICT). Since then it is felt that the COL has fulfilled its purpose of promotion of ODL, and hence the issue of its relevance for continuation is almost settled for future.

Every educational institution and organisation should also pose the question: Are they relevant and should they continue to exist with the same structure and functions in the context of emerging knowledge society. The strategy adopted by the COL is to shift the focus in ODL from learning to '**development**' and make it directly and explicitly relevant by adopting the goal of 'Learning for Development'. In this change of focus, the COL is guided by the global discussions and directions of development evolved and adopted by the UNESCO through its Millennium Development Goals, which were adopted by all countries of the world in 2000; and the programme of the United Nations Decade of Education for Sustainable Development (2005-2014) adopted by the UN General Assembly in December 2002 (www.unesco.org).

The universities are established for creation, preservation and dissemination of knowledge. The recent global changes have contributed a major addition of development to their functions. In the context of the 21st century, the goal of a university is to offer education for development of not only individuals but also of institutions, organisations, communities and societies. The traditional three functions of creation, preservation and dissemination of knowledge by a university are usually carried out through seven core processes (Takwale, 2003) of teaching, learning evaluation, creating knowledge resources, developing infrastructure facilities, creating educational environment and managing education. Educational systems followed by institutions are undergoing a radical change due to extensive applications of ICT. Information Technology (IT) is a driving force that is responsible for creating globalisation, a process not only for connecting people for their communication, but also for linking their work and collaborations. This unique nature of new technologies for linking people and their activities separated in space and time enables the system and institutions to carry out their operations from any place located anywhere. Today it is possible in corporate sector to have planning and managing office in New York, Research & Development (R&D) in Bangalore, production centre in China and distribution and sale services management in Singapore. With all these, an industry is becoming a distributed industry; and various units of industry, though separated geographically, work as if

they are located on one campus. This is the process of virtualisation, and has been made possible by the IT revolution currently sweeping the world.

The broadband Internet and digitisation of information have made virtualisation possible. (Digitisation is a process in which information is converted and stored in the binary code that helps users to manipulate and change the information as required.) The technology-mediated processes are now creating new directions and ways of development; these are

helping to create new ways of living, working, learning, developing, marketing, organising and managing. Technology mediation has evolved basically the processes of virtualisation, digitisation, and customization. The result is a distributed system of working, learning and developing; it is imparting us a central position. The industrial revolution had created a faceless society; the information society is restoring human face and human identity.

This chapter concentrates on articulation of globalisation, education and learning as an instrument of sustainable development of people and their communities. It should be noted that most of the development described in this chapter refers to the last decade i.e. since Internet became global in 1995. The technology and its mediation for socio-economic processes are fast changing due to profound discoveries in fields such as Information Technology, Biotechnology and Nano-Technology; and new sweeping inventions and creations will continue till technologies mature. Some experts are of the view that the maturation period for inventions and changes in IT is likely to continue for two to three decades and during this time processes of mediation would be constantly changing. This is therefore a period of rapid change and transformation; and new technologies developed for customer-friendly uses would always be better and superior. This, of course, would contradict the saying 'old is gold'. The technology dependent goals and models of institutions established during industrial age, and the processes evolved to carry out institutional functions, are likely to become irrelevant in the information or knowledge age. The constants and conservables are those that are related to human beings and their social nature. Much of the knowledge, experience and expertise created earlier are likely to be not usable and relevant.

Information Technology mediated processes are at the initial stages of creation and development, Under this transient situation, while writing this chapter, we have relied on generalizations and projections of the results of experiments that are going on in India. These projects and programmes, like technology and its mediation, are in the stage of evolving; and hence, while remaining objective and universal, the author's perspective and approaches have certainly influenced selection and treatment of topics, which is unavoidable in any writing.

Globalisation and its Stages :

Globalisation is a process in which people, articles, goods, services, ideas and knowledge flow from one place to another, usually separated by long distance or continents. This process of transfer, migration and resettlement is going on since ages and has helped civilizations to grow and spread. Globalisation acquired importance and impact in the second millennium. Land and coastal routes were used earlier to travel between Europe, Africa and Asia. However, since Columbus discovered America in 1498, a new era of intercontinental flow started. The then nation-states used new ways of transportation, initially for trade, and later on to conquer territories often motivated by religion and / or imperialism. The power of the nations then was brawn and muscles, horses and animals, and was used and still continues to be used for exploitation and gaining riches. The impact of this globalisation is that it has helped create colonies and migrate people, develop science and technology and reduce the world to a smaller accessible size. The auto machine led technology revolution, started with steam engine, electric machine, factories and mass production systems, has helped to link different regions through their markets. The market and business are existing since the beginning of human civilisation. They were earlier in the form of barter trade and commerce in a small locality and regions, and later on expanded internationally to fulfil people's needs and requirements. Markets have fulfilled basic and

higher needs of people and societies, and simultaneously, in unequal situations, have been used for exploitation by the powerful to become richer, stronger and more developed.

In the book '*The World is Flat*', Thomas Friedman has given a brief history of the globalised world in the 21st century by describing modern development through three stages. The first stage of globalisation was brought about by the nation-states (1490-1800); the second stage of globalisation was created by companies for profits through markets (1800-2000); and the third stage of globalisation is being developed by individuals and their collaborations since 2000 (Friedman, 2005). The march from the nation-state to individuals via companies and multinationals has been achieved due to revolutionary changes in technologies, particularly in communication and transportation. The impact of globalisation and expanding markets is the falling costs, increasing access to wide-variety and participation of larger masses in the development. The first two stages of globalisation continued till the middle of 20th century and were dominated by the North, especially Europe, America and Japan, who account for about 2 billion people. However, from the second half of the 20th century, and especially during the last ten years, the Russians, Chinese and Indians have started participating and have added nearly 2.5 billion people.

Technology Mediation :

Technology - soft or hard - has played very important role in development and progress of societies. Access to knowledge spread widely with the invention of printing technology in the 15th century. And auto-machines enabled us to create factories, which have added wide variety of application and helped speeded production, created products and services for utilities, extended outreach and coverage, and create Industrial Society. The major success of Industrial Revolution was mass-production and mass-circulation that enabled people to live better, know more, participate widely in development and lead healthier and richer life. The Information Communication Technologies (ICT) have helped to bring people and places together, to reduce and eliminate their barriers and offered innovative and entrepreneurial opportunities to individuals and groups to develop and prosper. ICT is changing nature of society essentially due to Micro-electronic and Digital Revolutions. ICT is offering:

- One to one communication (telephone, cell-phone)
- One to many communication (TV, Radio Broadcasting)
- Many to many communication (Internet and broadband communication)

IT offers storage and search (CD ROM, A/V tapes, Servers), networking through wires (optical and copper wires) and wireless (WiFi, mobile telephony and mobile Internet), and recording, replicating and copying facilities. Storage and processing powers are increasing continuously - processing power doubles every 18 months; and cost reduction, increased bandwidth for communication; extension of outreach and coverage, and increased access and participation are becoming regular news features of fast development of communication technologies. The broadcasting, telecommunicating and computing technologies are now converging; and convergence is going to be offered at home on TV screen, and outside on mobile cell-phone or PDA (personal digital assistant) screen. The convergence is influencing not only industrial world, but also having profound impact on social, economic and political sectors. The whole society, all living and working places and people, is getting connected, and a scenario is created where communication is possible from anywhere by anyone at anytime.

The information network consists of three layers: hardware, software and content-ware. New paradigms are made possible due to newly generated processes of virtualisation, digitisation and customisation or personalisation. The process of customization is a unique feature of the information society and a creation of IT. It aims at knowing personal or group needs and requirements, and organising supply of product and services that fulfil them.

By employing Internet, mobile technologies and networking, an infrastructure is getting created, which allows many collaborative processes such as open-sourcing, out-sourcing, off-shoring and in-sourcing (Friedman, 2005). In the coming ten years it is expected that most of the people in India would be connected. The driving force for this transformation is in fact the market expansion, changing nature of work and participation, and new opportunities of development and prosperity. The networks all over the world are changing the very nature and concept of markets. The market is expanding and extending to all places of work and all walks of life. This is bringing in a sort of convergence or confluence of interests of producers and customers. The producer's object is to sell a product and service the customer at an affordable cost while maintaining internationally prescribed quality, now provided by so many international agencies for the safety of customers and markets. For achieving lower costs, some provider companies have started reducing their production or service operation costs by enabling customers to share work. One such example is of the US based Southwest Airline, which eliminated travel agents and front-desk service of giving e-tickets and down-loadable boarding passes online. Cost reduction is passed on to the customer. In fact, providers have also to worry about purchasing power of the customer. Higher the customer purchasing power, bigger is the market. Hence many companies have started creating wider base, by widening multinational nature and by enabling participation of local and home based expertise. In fact the next generation paradigm is of enabling a customer to participate in production and distribution/deployment processes, whenever possible, for enhancing his/her purchasing power and spreading provider market. The distinction between producer and customer in such a development would slowly get reduced; when customised products and services become highly satisfactory to fulfil distinctive personal needs, a situation gets created where distinction between producer and consumer reduces, and a new information society worker, the prosumer (producer + consumer), gets created. The provider company has to maintain and enlarge its market share and customer base for its own survival and growth; and has to adopt a process of fulfilling not only immediate customer needs but also their future needs. The provider, therefore, catches, retains and follows the customer for fulfilling his/her life-long needs.

The convergence or development of prosumers requires:

1. Creation of 'level playing field' (Flat World) by creating networks and just-in-time services. This needs infrastructure with broadband Internet network and personal devices for accessing.
2. Development of new processes, habits and values essential for horizontal collaboration and partnership.
3. Enable larger number of people separated in time, space, communities and cultures to share their needs, and requirements as well as their expertise, experiences and capabilities to participate in all types of discoveries, innovations and entrepreneurial activities (Friedman, 2005)

The rapid development of newer and versatile technologies in IT is expected to change nature of communication further. The technologies such as development of high fidelity

Internet that can deliver 'immersive' technologies, and nano technologies are going to change communication and help in raising overall quality of life. The major direction of development visualized by 2020 is of personalization of mass technologies and linking these with local, contextual and need- based aspects of developmental processes. IT can help recreate humanization lost in the industrial society and, if used properly, can become a great equaliser (Venkateshan, 2005).

All these would need moving away from segregated and top-down control and command systems towards horizontal, participative and collaborative alliances and partnerships with a view to create a new world social order; the next goal of third millennium. The global need of governance system is being felt more intensely since the Second World War, and the development of global institutions such as UN, UNESCO etc., was the first step towards international governance. The need is of evolving global governance for global society, created by developing universal man with universal value system, which we believe, has to be based on policies based on inclusion and participation, justice and equity.

Education System for Providing Learning :

Development of civilization is closely related to learning and education system obtained in communities and societies. Learning takes place everywhere at all times. Learning is a process in which individual, group and communities internalise and reconstruct their own knowledge. It is described by the UNESCO's Four Pillars of Education: *learning to know, learning to do, learning to live together and learning to be*. Learning is knowing: creating knowledge base. Learning is doing: developing skills, competencies and capabilities. Learning is living together: developing attitudes, values and approaches essential for living, working, creating, organising, managing, caring and sharing. Learning is being: continuously evolving, liberating, elevating individuals to higher levels of achievements.

The systems of education have been evolved and classified into formal education (face-to-face and highly structured instruction), non-formal education (open and distance but structured instruction) and informal education (incidental and unstructured instruction). Education has always been a sub-system of the existing social order. It is a great instrument for liberation and equalisation. Education helps acquisition of knowledge, and consequent empowerment and creativity. Technologies, soft and hard, are the instruments and tools for socio-economic change and progress. The driving force is provided by the aspirations for better and richer life, social and national prosperity, peace, security and happiness. Technology, like education, has been an empowering tool; and technology mediation and knowledge intensive education and learning have now become powerful instruments for socio-economic and cultural transformation of people, communities and nations.

In India, the education in 'Agrarian Age' was limited to a few (class education), essentially belonging to the ruling and powerful classes. It was associated with religion and learning from Guru, the teacher, was the practice. The ancient Gurukul system promoted oral learning tradition that emphasised memorisation; the Guru was given highest regard and respect. The Gurukul system was highly personalised, need-based, decentralised, learner-paced but teacher-centric and socially supported. It was relevant to the social needs. Unfortunately lower castes and women were given no right to education during medieval period. The 'Industrial Age' changed the scenario. Machines and industries created working and developing opportunities for many. Industries were concentrated in big towns and cities; and the very nature of industry promoted centralisation and urbanisation. Mass-education emerged to fulfil the growing need of trained work force and professionals needed by the industry. Like a factory, education acquired rigid form essential to tackle

large numbers. The open universities designed and established were modelled on 'Industrial Form' of education, based on a definition of distance education by Otto Peters. The education concentrated on 'content', industrial values with greater 'market' orientation and used principles of division of labour, 'same fit for all' and 'more of the same'. The Industrial Age education is highly hierarchical with top-down control. However, since education deals with individual learning and performance, and has to nurture mind and intelligence to create and preserve knowledge, the educational institutions, wherein R&D dominated, saw the development of liberal and divergent thoughts, which influenced social, economic and cultural changes. The industrial society has followed inclusive policies that allowed education to spread from classes to masses.

The emergence of highly networked society, created due to revolutionary changes in IT, is now developing new paradigms of education. Initially the technology has been used to support the existing processes of formal or open distance education for speedy and efficient services, for expansion to cover large numbers and for maximising fee incomes (Farrel, 1999). Virtualisation and digitisation are used to support industrial model of education, the teacher-centric model of formal education. This education is content oriented, campus and classroom bound, often not linked with individual and societal needs. The open distance education has also more or less retained the same form with some added flexibility to learners in choosing pace, place and time of learning. The ODL has partially helped resolve the Sir John Daniel triangle of quality-access- cost through quality instructional materials made available to large numbers at lower fees. However it is far away from solving the quantity-quality-equity triangle – reflecting the goal of 'Quality Education for All'.

e-Education :

By using the processes of virtualisation, digitisation and customisation-personalisation, it is possible to establish virtual, educational institution (s) with distributed campus having infrastructure and facilities such as distributed classrooms, learning and teaching resources and learner support systems. At present, the e-education system is getting evolved along two major directions or streams:

1. *Teacher-Centric e-Education* with 20th century models with increasing learner flexibility.
2. *Learner-Centric e-Education* with 21st Century models of need based and demand driven e-Learning services.

Both the streams of e-educational transformation may ultimately integrate into one resulting into *e-Education/e-Learning for sustainable development*. This may happen due to technology convergence and its application to developmental processes; or starting originally with group learning and creating e-education for individual and group development processes. Incidentally e-Education also evolves through a triple convergence of formal, non-formal and informal modes of education.

The teacher-centric and learner-centric models are essentially the top-down or bottom-up models of education; the former facilitates the knowledge created globally to be brought to the learners; and the latter one is bottom-up model catering to the needs and requirements of students – the global as well as local needs of development. Both the directions would slowly merge into the e-education with increasing horizontal interactivities and communication.

We give here the efforts going on in Maharashtra for developing e-education. (www.mkcl.org). The infrastructure of networks and access centres has been created all over Maharashtra with 2,500 access centres equipped with licensed MS-office software, connecting nearly 15,000 computers linked with total e-governance with e-learning software giving all academic and administrative support facilities. It also contains two-way audio-graphic conferring facility at all places and video-conferencing facility at a few places. The software for virtual organisation and management and for digitisation of information with Shareable Content Object Reference Model (SCORM) compliance is available. During the last three years since establishment, Maharashtra Knowledge Corporation Limited (MKCL) has enrolled and supported 2 million learners, with 250 thousand students in one batch of April 2005, Similarly, IGNOU began to offer e-learning from 1999 in areas of IT, Management, Library automation and resettlement and rehabilitation. MPBOU, YCMOU and a few other open universities are also in the process of offering e-learning programmes.

The e-Education System essentially consists of (Takwale, 2003):

1. Planning and development system for designing courses and education system.
2. *Network development and delivery system*: The e-Education system is designed with VPN (Virtual Private Network) to support learners, experts and support service. It also uses the Knowledge Grid framework.
3. *Content development and integration system*: It allows experts and teachers to work together virtually. Instructional designers, content experts, media experts and Quality Assurance experts can jointly develop instructional material, which could be assessed through preview by selected students. The final content can then be replicated and web-casted or replicated on CD ROMs and mass-circulated.
4. **Delivery management system: It consists of**
 - a. *Administrative and Management Support System* to support applications, selection, registration, fee-collection, delivery, learner and teacher activity management, examination and instant certification.
 - b. *Learning Management System* to manage learner-teacher and learner-resource interactions and interactivities, which could be recorded and analyzed for personalization. (Mass-personalisation)
 - c. *Assignment Management System* in which assignments are given to each learner on personal basis, and learner submissions are evaluated by tutors anywhere in the system, and feedback is given to students. Not only print, but voice is also used in interactions. Learners can have chat/discussions with tutors and peers; and learner portfolio gets developed.
 - d. *On-line Evaluation and Examination System* with instant e-certification.
 - e. *Classroom Participation System* enables learners to participate in any lecture, seminar, tutorial or workshop, synchronously or asynchronously, and uses both print and voice communication.

5. Total management system.

New systems are being designed for teacher-centric resource based learning and certification. It is suitable for top-down dissemination of knowledge and skills development.

e-Education for Development and Sustainability :

Development of new paradigm in using ICT is to develop demand driven **need**-based education and learning system that helps learners to link learning with working and developing through lifelong learning. Development is a process in which knowledge, skills and capabilities are applied to solve the problems faced by an individual or group or community for producing value added products and services or for creating values through innovative and creative processes. The Process should lead to prosperity, which in turn could be measured in terms of productivity quality profitability and sustainability, the four criteria proposed by Dr. M S. Swaimnathan (Swaminathan 2005) The words such as value, profit, prosperity should not be taken in terms of money alone; these ought to be related to richer and **higher** quality life of an individual, family or community/village.

As pointed out earlier, the process of globalization and exploitation of international markets is required to observe International Organisations for Standardisation (ISO) norms and standards, maintain prescribed quality and environmental norms for which certification by recognized international agency is becoming essential. The norms and standards are dependent on how process is observed by following prescribed procedures. Continuous supervision by the ISO agency and periodic certification is becoming essential.

The whole shift is to the process management with appropriate inputs, throughputs and outputs and outcomes. In earlier systems, the processes and systems were managed manually, and were dominantly dependent of input norms, and results were judged by the outputs at the end of the process. This made process control and standardization very difficult. Now that ICT is available and most of the communication is electronic, the process control is convenient, as in industry, as any process could be well sandardised and customized to have desired outcomes.

The first stage of a new system development or transformation of the old to new is to create required infrastructure, resources, processes and systems. All these have to go through seven processes of institution building before starting operations. Change over to process management for desired performance achievement is the major transition in the system. The system follows institutional capability and maturation & personnel maturation models (CM & PMM). The core values and concepts that are embodied in the seven categories of the Baldrige National Quality Programme (BNQP, 2005) are :

- Leadership
- Strategic planning
- Student, stakeholders and market focus
- Faculty and staff focus
- Process management
- Organisational performance results
- Measurement, analysis and knowledge management

The education and learning system can be judged continuously by assessing *approaches* adopted to develop strategies to fulfil needs and requirements of target groups, *deployment* of processes and operations with appropriate systematic alignment to achieve the results, *learning* of lessons out of the cycle of operations, and *integration* of learning into the system. The system becomes quite dynamic and is suitable where processes are changing to suit the requirements of the customers. This is therefore most suitable for educating, learning and developing. (TCS, 2004) One of the major paradigms for development is the bottom-up

system (*Antyodaya*) with people participation and action (MKCL & NETRA, www.parivartan.net). In India and generally in South Asia, the most successful mechanism of development involving people is the Specific Interest Groups (SIGs), working and developing together. *Prayog Pariwar*, *Swadyaya Pariwar* and Self-Help Groups (SHGs) have shown very successful results. The groups and their community have organisational empowerment. The creation of bottom-up system would need software to promote application and work-flow management that enables knowing the individuals and groups, finding out their needs and aspirations-expectations, customization of curriculum for specific need based training and education of a group— the process of customization of education, deployment of knowledge and skills, assessment of learning achieved and lessons learnt and internalised. The cycle of learning and developing would repeat, with addition of knowledge and technology each time to build up capability and achieve better performance. This is, in fact, a capability-maturation and capability-building model and is non-competitive or self-competitive in nature. Promotion of such a model is no doubt a great social and developmental task. The learning and developing, besides being life-long, is also generative of local expertise, experience and knowledge, making the whole knowledge generation distributive, socially creative and locally innovative.

The National Assessment and Accreditation Council (NAAC) of India has adopted Quality Assessment and Accreditation model based on Seven Institutional Functions depending mostly on input and output measures. The process gives institutional assessment and accreditation. In order to make the institution dynamically changing and reforming, it is proposed to adopt Baldrige Model referred above for improving educational performance for making education relevant to the changing needs and global contexts. The NAAC has prescribed, five core values, namely (Takwale, 2004):

- Contribution to national development
- Fostering global competencies among students
- Inculcating value system in students
- Promoting the use of technology
- Quest for excellence

It is hoped that application of the model to educational institutions would lead to a model of excellence in developmental education. It should also lead to continually learning and developing institutions. However, due to the vast diversity and large number of colleges and universities in face-to-face system, the task of assessing all institutions is undoubtedly Herculean but it has gained momentum in the past few years and may take some time before all institutions are assessed. As far as ODL system is concerned, Distance Education Council has been mandated under Statute 5(2) of IGNOU to promote, coordinate and regulate the standard of education. In formative years, it collaborated with NAAC and developed tools and benchmarks for assessment of print, delivery and support. DEC has now created a database on the nature of courses, student profile, faculty, etc. and is in the process of developing comprehensive reports in respect of each Open University and Distance Education Institute. With the availability of EduSat, immense possibilities present us to take quality tele-education to the last mile by creating knowledge repositories of quality materials and opportunity for virtual teacher-learner interaction for use by each ODL institution.

Earlier, we considered technological and educational triple convergence. The third triple convergence is emerging out of bottom-up model of learning for development; the

convergence of 'work': working, learning and developing. A system of e-education or e-learning with all the three convergences together or 3x3 Convergence or Grand Convergence could be what would be ideal for developing and developed societies, for their progress and change. The Grand Convergence in e-education would develop a platform on which integrated way of living-working- developing-learning could lead to L3 (life-long-learning) people and their L (learning)-Groups and L-Communities.

One of the major issues is the sustainability of development of individuals, groups and communities. In the networked world, even though cooperative efforts would create level playing fields, those who are learned, competent and competitive may have better and higher achievements, creating disparities. Even though all disparities cannot be eliminated, the process of equalization can be initiated. And it requires everyone to work together for shared goals of human development. The very nature of existing markets that are harnessed with competitiveness for earning profits and riches, need a fundamental change; a change of attitude and approaches for sharing technological and knowledge resources and caring for the weak and disadvantaged. The Grand Convergence should be used to solve the value triangle of quality-quantity-equity for all learning groups and learning communities in terms of their own models of development and progress without exploitation. It would need creation and inculcation of universal human values for living and working together peacefully. The developmental models so created would be infinite; they would depend on localities, socio-cultural and economic contexts and local environments. One has to identify unity out of diversity for creating sustainability. The sustainability has to be sought in the contexts of both localisation and globalisation. It therefore moves towards creation and inculcation of universal human values; and gives higher goals and purposes for education and learning. Creating commonwealth for learning and learning commons for development and progress for all may be a goal of learning and education and a way for peaceful coexistence and happy communities.

Present Status and Directions of Development :

India has already accepted ODL as a national policy for increasing access and outreach. It is developing ICT as a national policy for creating knowledge economy and is supporting ODL through broadcasting, broadband Internet, mobile technologies and EduSat. The Union Government has supported many training and educational programs of IGNOU; the prominent being empowerment of women through self-help groups, teacher education under SSA, Intellectual Property Rights, Panchayati Raj, Value Added Products from Fruits and Vegetables, Dairy Farming, Rural Artisans, Small Scale entrepreneurs, etc. Many new initiatives to develop application of ICT in ODL have also come up, and in some, the COL is playing catalytic role for evolving new paradigms of Technology Mediated Open and Distance Education (Tech-MODE).

Following are a few selective examples of the initiatives that may have long-term impact on developing new paradigms:

1. Educational Satellite of India (EduSat) launched by Indian Space Research Organisation (ISRO) would help in creating distributed classrooms and network of schools and higher education institutions for offering quality education to all. IGNOU is leading the utilisation of EduSat and creation of National and Regional Networks with missionary zeal. Education should soon reach each TV home in the country.
2. Virtual Academy for Semi-Arid Tropics (VASAT) (www.vasat.org) promoted by International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and

supported by Consultative Group on International Agricultural Research (CGIAR) has been established for disseminating knowledge to farmers particularly in draught prone areas by disseminating research and technology outputs to farmers.

3. Establishment of private-public-community partnership with win-win approach, now being promoted by the Central and State Governments through contract farming and direct entry of farmers into markets. This would help in creating linkage between industry, markets and farming. A successful enterprise supported by COL for farmers was created for additional employment and earnings with bank credit and link with milk processing plant in Tamilnadu. IGNOU has initiated work in collaboration with Hero Honda to produce trained motor mechanics.
4. Development of consortium for L3 (Life-long-learning) farmers and teachers in India for bringing about systemic transformation in farming and school education for development.
5. Establishment of a private company for profit by the State Government and Universities in Maharashtra for developing new paradigms and fast changes in education and for avoiding digital divide (MKCL: www.mkcl.org)
6. Group learning and developing: Indian experience of SHGs, *Prayog Pariwar* (Experimenting Groups) or *Swadhyaya Pariwar* (Self-study Groups) have shown remarkable achievements, in individuals as well as group learning, developing and creating local specific knowledge and services. They are empowered in mobilizing themselves into organisations that participate and influence socio-economic processes of development. *Prayog Pariwar* has contributed significantly in establishing the agriculture programmes of YCMOU.

Searching and developing dimensions of partnerships that lead to sharing and caring, to universal value systems for supporting knowing, doing, living together and developing continuously is a task to be accomplished through learning for development. Essentially this is a quest for exploring various dimensions of freedom and fraternity for universal man /woman and global society.

Concluding Remarks :

India has shown remarkable progress in IT and is experimenting and developing technologies that could transform existing working and living ways within a decade or two. Global competitiveness has helped, in spite of initial hardships, to gear up industries and become globally competitive. However, the same cannot be said about education. India has a big but still inadequate system of education with top comparing well with the best in the world. The newly found Indian identity in industrial development has been well supported by intelligent and capable Indian graduates produced by Indian education and trained in industry. Still the Indian system of education as a whole is far away from being of high quality and competitive in global context. It is heavily constrained by conservative and rigid structures and old mind-sets. Moreover, the system is heavily guarded by various Councils at the national level under the pretext of quality maintenance but with little gains. It is also a fact that innovations and new paradigm development in evolving e-education is extremely difficult. New paradigms in e-Education for development would need freedom and support that is difficult in a conservative setup. What is, therefore, needed is a free space for new paradigm development; opportunities for relating programs with institutions, industries **and communities**, development of technology mediation with **mass**-personalisation and strong linkages with R&D in India for making education knowledge-intensive and development-centric.

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