

## **2.5 Globalizing Education Perspectives Processes And Paradigms For Developing Societies Through E-Education (2005)**

### *Abstract*

The Indian system of education is facing many challenges arising out of globalization and liberatisation.

The major issue and challenge is to use IT and evolve a new system of education that would link education with balanced and sustainable community and environmental development.

The human society is now changing over to information society or knowledge-based society. In the information age, it is IT driven processes made accessible through IT tools and techniques that enables to make education globalised localised and personalized.

Education providers can now use the networks and software tools and technologies for developing their own educational system (e-Education)

With appropriate models of development and delivery it is possible to employ IT driven education to achieve a) access and success to all, b) substantial cost reduction c) quality education for all, d) just-in-time education, and e) learner and learner group/community autonomy.

The virtual university is essentially a new organizational alternative of the information society and is in venality a virtual organization; and carries out its functions by optimizing ICT applications, Particularly by using IT driven processes and broadband connectivity.

Developing country like India has to consciously pursue policies and programs that will create national regional resources for teaching and learning.

National and social objective of e-education in a developing society has to fulfill aspirations of the people and nation.

This is an opportunity to build a new Indian Education System and new social order, which is obtained only once in a millennium (By – CGV)

## **Introduction**

The System of education is facing today many challenges arising out of globalizations and liberalization. The GATS and W.T.O. agreements will be effective at least in the areas of higher education from the year 2005, allowing foreign universities to market their education in this country. Use of Information Technology (IT) in the field of education is eliminating concept of jurisdiction of a university, and creating IT enabled facilities that enables teachers to offer education to anyone anywhere. This will enable many leading universities from India and abroad, private deemed-to-be universities and other providers of education to offer their educational programs to all students all over India and abroad. This creates competition for colleges and universities, and will be resulting into a threat to the existence and survival of weaker institutions in their existing forms and functions.

This is also a period of transition for humanity making transition from industrial society to Information Society, and, at the end of the process of change new social and economic order is expected to emerge. The Information Age is also recognized as the Knowledge Age; and the Indian Government and leaders in various fields are placing high hopes and goals of making India not only a developed country but a Knowledge Super Power by 2020. No country becomes a Knowledge Super Power, unless common people are developed to the highest level of their competencies and capabilities, and empowered through tools and technologies of the age to enable them to mature their capabilities and to participate in developments taking place all around. This can be achieved only through a right type of system of education for all.

The present paper is dedicated to Dr. Chitra Naik, a renowned Indian educationist of great eminence and foresight who has conceived and developed non-formal educational models with learner-centric development linked with community and environment. We do believe that her ideas, perspectives and non-formal processes could find a new formulation through the applications of Information Communication Technologies (ICT). The paper deals with various perspectives and processes, mainly in the area of higher education in the Indian context, that are emerging or likely to emerge in the Information Society due to processes enabled and driven by Information Technologies.

**\* Four Decades of Distance Education in India - 2006**

## **Problems and Issues Created due to Globalization**

India has successfully created one of the biggest systems of education in the world. However, Indian Education System faces problems and issues that originate from socio-economic disparities and developmental models adopted. With all the impressive development in the areas of Information Technology, space science, nuclear technology, oil exploration, industrial production etc., India could not solve its problems of poverty, ignorance and

underdevelopment completely and successfully due to various reasons. Nearly 25% people are still below poverty line; one-third are illiterate and disparities amongst rich-poor, urban-rural, educated-uneducated are high, which are creating enormous social tensions. The country has to face challenges of globalization and pressures of liberalization while continuing its fight against poverty, illiteracy and disadvantages.

The major problems before the Indian Education System are :

- ❖ **Comodification of Education:** Education is becoming a marketing commodity and multi-billion dollar business.
- ❖ **Global Competitiveness:** The competition will essentially be for offering quality education recognized at the national and International level for obtaining job and work opportunities,
- ❖ **Concerns of Weaker Institutions:** High quality and International relevance of education offered by worlds' leading universities and colleges is likely to create problems of survival of weaker universities and colleges.
- ❖ **Developmental Disparities and Unsolved Indian Problems:** Globalization is likely to create digital divide on economic and regional lines and the institutions working for weaker sections and disadvantaged are likely to be marginalized. High cost of higher education would widen the gulf between rich and poor.

**More of** the same will not offer a way out. The major issue and challenge is to use IT and evolve a new system of education that may enable educational institutions to develop appropriate paradigms of education, through cooperative mode; and to offer alternative models of education that would link education with balanced and sustainable community and environmental development.

### **Globalization and Education**

Human society has seen many transitions; the major changes being from tribal society to agrarian society, which changed to industrial society during the last, few centuries. It is now changing over to Information Society or Knowledge based society. The last transformation has just started during the last decade, and by considering the fast pace of change, may complete the transition within a couple of decades. The driving forces for transformation are in each case of the tools and techniques discovered by the people based on the knowledge of nature - living as well as non-living. The tools and technologies used by human being have made tremendous advancements; it started as a supplementation to the human muscle power in agrarian age; the hand operated machines and tools were made to work with automotive forces in industrial age; and machines are becoming not only automatic but intelligent in the Information Age. The Information Communication Technology (ICT) is now the driving force for the Information Age; and is transforming rather, very rapidly, the way we communicate, work, entertain, organize etc.

In all these changes now taking place in various processes in industrial society, one key process stands out uniquely; the convergence of communication technologies, integrating computing, tele-communicating and broadcasting sciences. Development and progress in

Information Technology (IT) has created global communication networks and generated globalization. ICT enables not only connecting people and places, but also helps in customizing services and products to the needs of individuals. This customization or personalization is achieved through the Second-Generation Information Technologies (Massood Zarrabian, 2003) or IT Driven Technologies currently being developed. The process of customization could be developed for individuals (personalization), for groups of people (group customization) and for institutions, In fact, these features of using IT for local uses lead to localization processes which are essential for relevance. Hence, appropriate combination of globalization (Direction of global development) and localization (Relevance to local development) leads to the progress whose models and paradigms could be developed by the people depending on their socio-cultural background, the localized contexts and their aspirations.

Development and progress in Information Technology (IT) has created global communication networks, which are responsible for globalization and liberalization. They have generated new processes of (A. R. Mashelkar, 1999) :

- ❖ **Globalised markets** being made available due to various technology developments and high-speed communications.
- ❖ **New ways of work and wealth generation** by creating new IT based appliances and applications and IT Enabled services, which are essentially dependent on knowledge and intellectual skills rather than physical and capital resources.
- ❖ **Intellectual property creation** is changing concepts of wealth and power of a society or nation.

All these factors have given education as the means for acquisition of knowledge a higher and center stage role-in all processes of living, working and developing.

Information Technology is fast changing and might take a decade or two till it gets matured when further developments in IT would hardly any operational significance. During this period the educational system and for that matter any system has to be designed to be open to the changes both in IT and new socio-economic processes.

## IT Development

The major **trend-setting technologies that** will affect educational communication between teachers and learners are:

- ❖ Broadband and Mobile/wireless Internet,
- ❖ Networks,
- ❖ DTH and WLL to address the last mile problem of Connectivity,
- ❖ Grid Networking Architecture for Knowledge Grid development.
- ❖ Software and Personalization/Localization Technologies.

All these advances in communication technologies offer fantastic possibilities of developing new processes and perspectives in education. The issues of inclusion of deprived learners due to rural inhabitation, poverty or illiteracy and access to IT (digital divide) are tasks, which need special attention - political as well as socio-economic. It is however conceivable that within this decade, the problems of network access and inclusion of the disadvantaged in India could be solved.

## Networked Education and Society

The broadband Internet with grid network enables us to create educational communication that could:

- ❖ Make teaching and learning possible from Anywhere, Anytime;
- ❖ Link education - learning with life and work related processes and places;
- ❖ Create National /Regional Grid network of educational content and services, which can flow in the network and support the processes of educating- learning, teaching and evaluating- anywhere anytime and
- ❖ Enable educators and educational institutions to create new paradigms of education dependent on various developmental perspectives.

Development and progress of IT and its wider applications in all walks of life and work will be creating a society, in which every individual, group, community will be linked through Internet with others. People will be using small hand-held and tabletop devices to communicate, access and send information, participate from a distance in talks, seminars, workshops and small/big group activities from a distance. In such a networked society, all communications and information could be stored somewhere, creating information world, which could be accessed and, analyzed, and useful information could be found out. Useful information or knowledge could be utilized for value addition or wealth generation. The persons who could find **Useful** knowledge by using various IT tools and techniques, and could have related functionality to convert that knowledge into wealth will be most successful in 21<sup>st</sup> Century. Education has therefore, to cultivate skills and competencies in using IT tools and techniques in the networked Globalized context with a view to creating and nurturing creativity, innovativeness and entrepreneurship to convert knowledge into wealth- Education has to help in identifying and creating work and employment opportunities that would lead to new types of self-employment opportunities such as knowledge workers, information service providers, tools/technique developers, process/system software designers, IT enabled community development and field workers etc.

The process essentially generated by IT enabled and IT driven changes would lead to new reorganization and also deinstitutionalization of existing 20<sup>th</sup> century institutions. Tools and techniques of the Information Age have inherent facilities and capabilities to enable planners and designers to build new transparent, accountable and efficient processes. This is possible not only for educating but also for various social and economic activities and functions (Takwale, 2003).

## Main Processes of Education

India is having one of the largest system of tertiary education with more than 300 university level institutions (single and dual mode universities that include central and state universities, deemed- to-be universities, institutions of national importance, open universities), 14 000 colleges, 9 million students and 0,4 million teachers.

The size of the total system appears to be quite large and impressive, but it covers hardly 6% of the relevant age group. In order to compare well with the developed countries having coverage of about 30-40%, India has an enormous task of creating huge infrastructure, which will require financial resources not affordable to the nation. It is therefore necessary to evolve some alternative and new ways of increasing coverage and for offering more alternatives and access to a large number of aspiring learners with affordable cost.

It should be noted that learning process always takes place in the cognition of an individual; and is dependent on the psychomotor and affective development of the person. Education is therefore very personal process of learning, Learner expresses his/her achievements through the skills and functionalities acquired, which are very much dependent on technologies of the Age or tools and techniques the society uses. Hence basic and fundamental process of learning is very personalized and is independent of technologies and modes of education. However, it needs interactivities with other individuals or learning materials, which are dependent on the technologies of communication of the Age,

Another process of education, which is very much essential for social development, is awakening and development of conscience of people and communities. A person cannot be separated from society and environment he lives and works in, Hence linking all the educational processes with the development of groups and communities is as essential as a personal development.

One of the key issues is, therefore, to identify processes of education that are mode and technology independent.

ICT is offering an opportunity of redesigning and developing new models of education. While considering new paradigms it is essential to concentrate on the five main processes that forms a set of invariant processes for any educational system in any mode of education. (Takwale op.cit)

- ❖ **Educating** : Teaching, Learning, Evaluation;
- ❖ **Creating** Knowledge Resources;
- ❖ **Developing** Infrastructure! Facilities;
- ❖ **Creating Educational Environment** and
- ❖ **Managing** Education.

The major task is to design and develop processes by using IT that address successfully the problems of quality, quantity, equity, access and even success of large number of students that Indian educational system is facing.

### e-Education and its Processes

e-Education is essentially the same education with the same basic processes of educating, creating, developing and managing which are carried out by individuals, institutions and communities for achieving the goals of education. In the information age it is IT driven: processes made accessible through IT tools and techniques that enables to make education globalized, localized and personalized. The outcome of this application of technologies would be in a form of organizations and institutions, which may be quite distinct and different from the existing institutions.

ICT could assist in ensuring personalization of education and increasing intimacy in dialogue between teacher/tutor/expert/guide and learner. The new form of education, the e-education, can be used to denote both the shifts from the current Industrial or Factory Model of Education and adoption of IT enabled and IT driven processes in development and delivery of education. It is assumed that this shift will be complete when broadband Internet connectivity, essential software and IT appliances are made available to Anyone, Anywhere, Anytime. The new paradigm of e-education is however of a non- industrial form and should offer personalized education on a mass scale (Mass Personalization).

In the traditional educational institution, course or paper is the smallest unit of teaching. Institutions use the principle of "**One size fits all**". With the help of technologies of second generation or IT driven technologies, packaging and delivery of the courses could be changed to offer personalized curriculum and a teacher can prescribe learning content with appropriate objectives and outcomes along with learning path unique to match the needs and background of the student.

Education being a sub-set of the society it will be a networked system in a Networked Society; and will require educational system that will be able to offer educational opportunities to all.

Any Networked Society will need :

- ❖ **Network with broadband connectivity** linking hardware and appliances at various places for giving access to anyone, anytime, anywhere.
- ❖ **Software tools, techniques and applications** for enabling people and their groups and institutions to communicate with others quite intimately.
- ❖ **Content** needed and shared by groups of people, organizations/ institutions, which enables providers to offer services to users and customers.

Education providers can now use the networks and software tools and technologies for developing their own educational system (e- Education).

**e-Education System** requires the following framework and infrastructure :

1. **Network with latest hardware and technologies** along with broadband connectivity and grid architecture giving network access to anyone, anywhere, anytime.
2. **Software tools and techniques** that enable creation of databases and information flows, offer facilities to learners, teachers and institutions to receive and to give personalized and localized education on a mass scale.
3. **Content in e-formats on a knowledge grid** that enables teachers and students to get personalized curriculum of high quality, relevance and utility,
4. **Educational delivery system** that ensures quality and developmental relevance of educational offerings (Developmental Education) for individual, institutions and community.
5. **Quality Assurance and Certification Mechanism** to maintain competitively high and acceptable standards at national and international levels.

The Framework given above can serve as a national and regional infrastructure to support educational processes of any provider institution, individual and organization in India. The five invariant educational processes identified above could find their expression through the e-Education Framework for any educational offerings and their management. The institutions and organisations like University Grants Commission of India (UGC Infonet), Maharashtra Knowledge Corporation Limited ([www.mkcl.org](http://www.mkcl.org)), virtual universities like Virtual Academy for Semi-Arid Tropics ([www.vasat.org](http://www.vasat.org)) by ICRISAT and Virtual University for Maharashtra Agrarian Prosperity are some of the efforts in creating educational networks that could be used by educational providers for reaching various target groups identified by each organisation.

#### **IT Enabled and IT Driven Education**

Many formal and open universities are at present using IT for fast communication between institution/teachers and students, and for administration of student and teacher activities. These are the "first generation" technologies and help provider institution to achieve better efficiency, reduce costs and extend outreach and coverage to larger number of students outside the usual jurisdiction of an institution. This may be called IT Enabled education (enabled by 1<sup>st</sup> Generation Technologies), since it basically does not change the model of education, and retains the earlier methods and processes of teaching-learning and evaluation.

Development of Meta-Database with reusable content granules and packaging of the content to suit individual needs is creating personalization of education enabled only by the use of technologies. The learning technologies developed and used for learner-centricity and personalized education are termed as "second generation" technologies (Massood Zarabian, 2003) and offer IT Driven Education. They are changing the methods of content generation, content storage, content packaging and content delivery and hence offer a new paradigm of education.

One of the distinctive features of the IT driven processes is the Mass Personalization. In fact in the new paradigms, new processes and products, unknown so far, such as mass-



personalization. Peoples' technologies and just-in-time education are possible only due to the IT driven technologies and networking used to fulfill needs and aspirations of individuals and groups.

#### e-Educational Processes

The five invariant educational processes identified above get grouped and reorganized differently when networks and software are used. When students could be reached through broadcasting and multicasting classrooms, in e-education framework web casting along with face-to-face contacts at a local level, makes the process of administration and management paperless and practically automatic; ensures communication through network access and conferencing devices; enables development of distributed education through distributed classrooms, server based and networked learning resources both of stable and dynamic nature; and enables learners and teachers to use these facilities and resources in a variety of ways with openness and learner autonomy. Software and networking eliminates most of the constraints of administration and teachers and education providers can concentrate on offering courses and programs with perspectives and paradigm development appropriate to their target groups.

Software tools and techniques that are already in use or at the stage of active developmental are :

- ❖ **E-Governance** for educational organisation and management.
- ❖ **Group teaching and learning** environments for distributed education.
- ❖ Meta-databases for content with reusable learning objects (RLO) with a possibility for offering learning path to a learner and for following development and achievement of a learner.
- ❖ **Software** for on-line and on-demand evaluation of learner achievements and for giving quick achievement results and certification.

With the help of these software many of the issues of management of education gets resolved, and offering educational courses becomes a decentralized and distributed operation creating a system of distributed education.

#### Content development and delivery

In formal & non-formal systems, a course of a program is the smallest unit of teaching and learning. It is delivered to a class of students in a college/university or through a study center in an open university system. It uses the same content and curriculum for all, and does not take into account personal background, needs & requirements, prior learning & experiences as well as outputs and outcomes essential for a learner success in life and work situations. It is, therefore, essential to store content in such units and formats, which could allow packaging of various units into a personalized content that suits the learners' needs. Such methods and technologies are getting developed in e-Education through meta-database content management system.

In e-education, content has to be developed and stored in such a way that a teacher or learner should be able to combine various small units or granules of contents (reusable learning objects - RLO) with definite learning objectives and outcomes. A granule could be conceived

as the smallest learning or teaching unit with single definite objective and output /outcome. A granule may contain a large number of content items, often called objects, in the form of texts, pictures, graphs, audio, video, animations and simulation; each one requiring study time of one to fifteen minutes. Each object could be tagged to reuse it in different contexts with different purpose and at different levels of learning.

Creation of such a database could be organized in such a way that all the teachers and experts create learning objects and granules in areas of their interest and deposit them with tags attached to each granule and content object. This would be an universal content creation process and the meta-data base created could be accessed and used all learners and teachers. The tags will enable a search engine to select appropriate objects and granules to form a syllabus/curriculum needed by a learner. This leads to a personalized syllabus for a student. The well designed and developed mega-databases would be an universal sources of educational content and forms an essential resource for developing knowledge based society. International norms are getting evolved in developing databases (Sharable Content Object Reference Model-SCORM- compliance) so that databases could have wider accessibility, transferability and usability.

The University Grants Commission in collaboration with the Commonwealth of Learning is in proposing to obtain software system for creating meta-database for Indian education system. The UGC has also initiated actions for e-content creation for developing digital repositories for the use of Indian institutions.

#### Content Delivery

Technologies are essential for offering personalized curriculum to each individual. They are being developed for various customizations\_ Such Personalization Technologies allow teachers and providers of educations to dynamically recognize the role and profile of **each** learner and respond according to the needs and requirements of a student. A good teacher will formulate a curriculum for a student (personalized curriculum) by prescribing learning (Prescriptive Learning) by identifying learning and knowledge gaps; and setting a correct learning path for the student. This will enable the student to build on prior knowledge and learning, and reach the objects/goals set for him/her in the curriculum. Such a learner-centricity achieved through educational technologies will ensure success for every student. The e-education framework and infrastructure through personalization technologies will pave the way for ensuring **"access and success"** in the field of education.

With appropriate models of development and delivery it is possible to employ IT driven education to achieve:

- ❖ Access and success to all;
- ❖ Substantial cost reduction;
- ❖ Quality education for all;
- ❖ Just-in-time education;
- ❖ Learner and learner group/community autonomy.

The learner autonomy would employ learner freedom in deciding the goals, content and outcomes of education and the path of development to achieve the goals. The teacher and institution autonomy of the teacher lies in offering courses and programs with specific perspectives and developmental paradigm they consider most appropriate for learners. The

choice of choosing courses with suitable objects and outcomes obviously should rest with learners or learner groups and communities.

Many of the problems and concerns could be addressed successfully by creating National and Regional e-Education Network, infrastructure and knowledge resources. By promoting teachers, experts, educational managements, industries and social and community leaders to use the Network for evolving various developmental models that could address the problems of disparities, underdevelopment and disadvantages, it is possible to create e-education system for giving quality education for all.

## **New Paradigms and Perspectives**

### **Self-actualization Model of Education**

Dr. Chitra Naik, a renowned educationist and former Member of the Planning Commission, has raised a very interesting question: "Do we accept the industrial metaphor of **"input-process-output"** in which the learner is treated as a chunk of raw material to be processed into uniform bits of product, or do we agree to consider education as a **"blossoming out"** process in which an organism grows to its full capacity because of its symbiotic relationship with its environment?"

The industrial model may be appropriate to the Industrial Society, which is inherently an exploitative system, exploiting workers by treating them as cogs in the machine, and society as market for selling products and services created by industry for the benefits of producers.

The **"blossoming out"** or **"self-actualization model"** is closer to the model of agrarian society; and is not now replicable. The supportive environmental nature then available for all development and growth is not available now, due to exploitation and destruction of the nature. Humanity is also at the higher stage of development the industrial stage, using mostly not the primary materials available directly in nature but the secondary materials created by processing the primary ones. However, creating a new environment that would give freedom to individuals and communities to think and act, to pursue self-actualization activities in accordance with one's own or of community- ideas and ideals is certainly possible.

### **Developmental Education - From Knowing to Being**

Developmental education essentially links education directly with development, and its evaluation is based on participation and achievement of the development demanded and needed by the individuals and communities. In a networked educational system, a learner can learn while working and living at any place. The dominant process of developmental education would be working, learning and developing continuously. This mode of education is therefore most suitable for life-long-learning and learning societies for their continuous development and progress; and manifests the processes of learning to know, learning to do, learning to live together and learning to be - the Four Pillars of Education proposed by UNESCO.

By developing and employing personalization and localization technologies, it is possible to create mass personalized e-education system based on developmental education. By using ICT, it is therefore essential to develop learning and developing environment, for serving individuals, groups, institutions and communities for achieving their developmental goals. Such a systems of education has to be based on the process of empowering people, and their

institutions and communities. The essential tools for empowering could be the mobilization technologies that could help groups and communities to organize their functions and activities efficiently and effectively. Such a social developmental approach is very essential for the developing societies like Indian society. The localization process is therefore a part of the developmental scenario of global development.

#### Learning Groups and Learning Communities

The challenge of evolving new paradigms of Education For All implies :

1. Expanding coverage of learners so as to include all in the society.
2. **Networking all the educational institutions, social and industrial organizations and institutions along with their resources by promoting private and public partnership.**
3. **Promoting Life-long-learning and Learning Communities** by organizing Special Interest Groups such as Swadhyaya (Self learning groups) & Prayog Pariwar (Experimenting Group) formed in Maharashtra, as continuously learning groups and their communities.
4. **Empowering groups and communities** economically, socially, culturally and politically.

In the Indian context, illiteracy becomes a great hurdle in extending education to all. In the new scenario, however, less educated **and even** illiterates could be educated by using new media. This is proved to be right by a success story of skill training of tannery workers in Chennai by Indira Gandhi National Open University, New Delhi.

Maharashtra Knowledge Corporation has undertaken a program of preparing a state-Network infrastructure for e-education in Maharashtra and reaching finally to all villages in Maharashtra with a network of Community Learning and Information Centers (CLIC) ([www.makcl.net](http://www.makcl.net) and [www.parivartan.net](http://www.parivartan.net)) **with e-governance and participation of private and public organizations and institutions on the basis of self-sustainability.**

#### **Globalization + Localization = Glocalization**

Networking and extensive use of IT enables :

- ❖ **Integration & Convergence** of not only technologies but many socio-economic and cultural processes.
- ❖ **Globalization** making information and knowledge omnipresent
- ❖ **Decentralization and localization** promoting inclusion of geographically, economically and socially isolated groups and communities.
- ❖ **Personalization** ensuring access and success in the processes of development.

- ❖ **Transparency and openness** making paradigms, processes and services accessible and accountable.

**If these principles could be incorporated in the design and development of IT enabled and IT driven perspectives and paradigms** they would change the nature and character of the emerging society. New paradigms can help promote culture of participatory democratic processes with decentralization, create accountability and local relevance and help in efforts for total development of a locality and local community.

#### Virtual Organizations- Virtual Universities

During the last few years, many universities and colleges are getting ready to face the impact of globalization and emerging competition in marketing education by forming consortia of colleges and universities. The major approach employed is to partner with other colleges and universities and to offer the best available educational expertise, courses and services to students both on-campus and off-campus. This is also aimed at survival of small institutions against the competition from the big ones. In all such consortia, the first generation software technologies are used which obviously work with the existing paradigm.

**The Concept of a Virtual University** (Glen Farrell, a team leader and Editor) of a consortium of instituting, enabled by appropriate ICT applications, working together in practical ways to plan programmes, develop the required content and ensure the delivery of those programmes and support services to learners.

The virtual university is essentially a new organizational alternative of the Information Society and is in reality a virtual organization; and carries out its functions by optimizing ICT applications, particularly by using IT driven processes and broadband connectivity.

The virtual university is a concept at the initial stage of development and operations, and offers an opportunity to radically transform the existing models and practices of education. Educating and learning could be made a central function in the new context in all the human developmental activities.

Creation of National and Regional e-Educational Network prescribed earlier that would support all universities, colleges, teachers and learners in their pursuit of knowledge and development is an essential infrastructure required for development of virtual organisations. Such an infrastructure and framework could help weaker and disadvantaged colleges & universities to join regional / national / global consortia and offer best educational provisions to their local students by offering personalized and group services in the local context.

New organizations appropriate for 21<sup>st</sup> century are getting developed; and Virtual Academy for Semi-Arid Tropics (VASAT) by ICRISAT, Hyderabad and M.S. Swaminathan Foundation, Chennai, Virtual University for Maharashtra Agrarian Prosperity (VUMAP) by Agriculture Department, Government of Maharashtra, are some of the initiatives that are coming up in India.

#### National/Global Knowledge Resources and Networks

Developing country like India has to consciously pursue policies and programs that will create national / regional resources for teaching and learning. UGC has already taken up networking program for linking all universities and colleges in the country, create e-content and put it on meta-database so as to offer quality course content and expert services, offer

educational environment that would help teachers to assess learning process and outcomes of a learner and raise in general quality of education imparted. By following policies such as **content is free and services** are charged, and **linking learning and working**, and using distributed education through the facilities offered by educational satellite {distributed classroom, broadband internet and DTH) could reduce unit cost of education substantially and raise the affordability of educational provisions, Creating global knowledge resources and giving free access to all learners should be considered as the social and national obligation essential for balanced development of knowledge based society, and should be undertaken as a participatory movement at an international level.

#### Proprietary versus Open Learning Resources

One of the major concern is the marketing strategies employed by some for using globalization as a wider opportunity for marketing education, and treating education as a marketable commodity. The ESPs (Education Service Providers) from developed countries could reduce tuition fees substantially by using ICT, offer best of content and expertise with global brand and attract more and more students. If this succeeds, many weaker institutions, both from developed and developing countries would perish and digital divide on the economic lines would increase, A cooperative and consortia approach by universities and colleges is essential in the context of globalization of education.

Strategies to avoid this proprietary approach of marketing educational products and services are to:

- ❖ **Promote open source content and software** development that would compete proprietary ones in quality and relevance.
- ❖ **Link education to localization, personalization and development** of not only for individuals but also for groups and communities.
- ❖ **Promote public and private partnership** with win-win approach that would reduce and ultimately eliminate exploitative situations.
- ❖ **Link education with autonomy to learning groups and learning communities** who are concerned with sustainable and balanced development of people and communities on sharing and caring basis.
- ❖ **Create national/international movement and organized strengths** of learning communities through consciousness building for equity, justice and universal brotherhood.

The globalization of education allows us to build such perspectives and paradigms by exploiting power of networking and global communication for creating peaceful, prosperous and happy world.

## Concluding Remarks

Since independence, India is struggling to evolve its Indian National System of Education, which is capable of addressing the issues of quantity, quality and access & success on the basis of Indian culture, heritage and value system. The National /Regional e-Education Networks will enable the Indian educationists to evolve new paradigm and perspectives that

can shape emerging new society; and new strategies in "cooperative marketing" of education with developmental models- appropriate to the developing society.

National and social objective of the e-education in a developing society has to fulfill aspirations of the people and nation and to address the age-old problems of poverty, ignorance, underdevelopment and disadvantages. E-education system with right framework and national infrastructure has a great potential to create developmental education that would result in creating social and human wealth, besides physical wealth. The crucial test lies in addressing unsolved problems successfully by mobilizing common people and creating learning communities to achieve *Antyodaya* (Upliftment of the lowest) with equity and justice. This is an opportunity to build a New Indian Education System and new social order, which is obtained only once in a millennium.

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