5.4 'EMERGING PERSPECTIVES AND PARADIGMS IN HIGHER EDUCATION'

1. INTRODUCTION

I would like to express my sincere thanks to the Vice-Chancellor, his colleagues and the authorities of the North Maharashtra University for giving me the honour of being the Chief Guest at the Fifth Convocation of North Maharashtra University. The long standing aspirations of Khandesh were fulfilled by the establishment of this University in August, 1990. Inspire of the meagre support received, this University has done remarkably well in establishing its campus and infrastructure, taking over academic functions and starting same postgraduate departments in new areas relevant to North Maharashtra. One of the major initiatives, deserving special mention, is the effort undertaken in rooting out malpractices in the field of education, particularly copying in examinations. The university education which is expected to shape the minds of the younger generation and, therefore, of our future society is unfortunately getting affected by cancerous practices rampant in our society. Any process of education carried out by following the wrong means and values will never lead to good education. I need not overemphasise this point in the land of Sane Guruji. I would, therefore, like to put on record my appreciation of the sincere, forceful and committed efforts made by the NMU and particularly by the first Vice-Chancellor and the efforts now being made by the current Vice-Chancellor in steering university education to the right path.

Khandesh is a land of Bhaskaracharya and Sane Guruji, a prosperous land of rich minds with limitless generosity. The NMU, I am sure, would identify itself, through its academic studies and programmes, with the soil of North Maharashtra and elevate it to that quality and standard appropriate to the national and global scenario. Let me wish all the very best to the young university.

This year we are celebrating the Golden Jubilee **of** Indian independence. After about three years we will be entering the 21st century. At this crucial juncture, it is essential to look back at the achievements of higher education during the last fifty years, consider the scenario emerging at the turn of the century and look into the early part of the 21st century for the nature and functions of the university as an institution and system. I know the task is enormous and complex. It is being discussed and debated in many national and international foram and organisations. Even if I succeeded in pointing out the directions and the nature of changes, I think, the purpose of the Address would be fulfilled.

2. DEVELOPMENT OF UNIVERSITY SYSTEM IN INDIA

India boasts of one of the biggest systems of education in the world. The university education system which had 2/ universities, 750 colleges, 12,000 teachers and 2,50,000 students in 1950 has now grown u 250 universities, 9,000 colleges, 3,00,000 teachers anr 60 lakh students. Though very large in absolute terms, the enrolment hardly covers about 6% of the relevant age group of 17-24 years. With the universalisation of elementary education, and the corresponding growth in secondary education, receiving high priority on the agenda for the next decade, the demand on tertiary education for greater access would increase still further.

Besides the growth in numbers of students and institution, the range of disciplines and types of institutions, such as special and professional institutions like UTs, HMs, agricultural universities etc. have been added. However, the imbalance in enrolment in various faculties continues, with few having access to professional and technological course and the majority still going to general purpose first-degree programmes in humanities, social sciences and sciences. The disadvantaged in this respect are the students from rural and remote areas. A liberal policy of allowing so-called 'non-aided colleges' was started to contribute in financing higher education. Some private providers of education such as 'Manipal Academy for Higher Education", 'Bharati Vidyapeeth' were given the status of "deemed" universities, The bill for establishing private universities is under consideration. The shift is clearly towards liberalization and encouragement to private and public institution to take-up the responsibility of higher education general as well as professional and technological.

The process of privatisation and liberalisation during the last one or two decades have brought in the field of education and training new providers of educatioi often supported by industries or private entrepreneur, and agencies. They are motivated with dual goals one fulfilling the felt need in their own industry sector or profession, such as high quality management 01 modern technological courses. The examples are BITs Pilani, some Management and Engineering Institution? etc. The second motivation is of a business venture in this traditional field of education now requiring new approaches. Some of these institutions are trying to have linkages with educational institutions from developed countries, who are also trying to find financial support for their own institutions through such twinning programmes.

Privatisation is the Govt's response to the process of globalisation. Which in turn, helps the Govt to limit its support to higher education and attend to other serious and hitherto neglected areas of school education and adult literacy programmes. Private enterprises like private coaching or tutorial colleges and classes have been in existence for quite a long time as a parallel system of education. Private institutions for industrial and skill training are quite old and have a good reputation in attracting learners and serving the felt need in the industry and administrative sectors. In the process of globalisation and the fast changing scenario they are acquiring importance and will be the first to use modern approaches of management and technologies of communication to establish themselves as supportive or alternate systems of education. They have already inducted a new way of managing higher education and the best, example is that of management institutions. The supremacy of the university in such a situation lies in the fact that a monopoly power is bestowed on the university by the state in awarding degrees. The global scenario emerging now is likely to affect this power of universities quite seriously.

3. FORCES OF CHANGE

As a society and nation we have travelled quite for from the concept of highter education for a few, to a higher education for the masses. With the universalisation of primary and secondary education, the country is likely to enter, within a decade or two, a situation when every 16 years old will have 10 years of basic schooling. Everyone will need to learn some skills to be useful in life and work situations. As the level of modernisation and technological sophistication increases, highter education will be the universal need. In this rapidly changing scenario, we are moving towards newer concepts in education such as continuing education, life long education, education for all, learning without forntiers, seamless learning etc.

The explosion of knowledge and its fast and rapid conversion into useful applications require new skills to handle new methods and instruments. The changes are quite rapid in some fields such as computer sciences. Newer software packages and hardware are coming up after every couple of years. Various areas such as the economy, the political secnario, bio-technology, management and marketing etc. are all changing very rapidly. This is creating problems of obsolescence and irrelevance. Satellite communication is accelerating the process of globalisation quite rapidly. Training and retraining are becoming the prime needs of individuals and institutions if they are to adjust to the changes and use them for their own development and progress. This obviously requires an educational system of a different type, essentially to respond to

- **A diversity of learners**: of all ages, with different backgrounds and experiences.

- **A diversity of goals**: 'learners will have different motivations and objectives of learning and their choice will have as much variety and diversity as the situations faced by them in their personal, working and social lives.

- **A diversity of context**: full time study within the time-table constraint of an educational institution will hardly satisfy a few; for many will need study at their own pace, convenience and location.

Responses to the forces of change and demand will obviously need a different nature of supply. The world over, the education system is increasingly responding to the demands by devising newer curriculam, delivery methods, assessment and award-making to recognise the new learners and their needs. Three major changes will become noticeable. These are-

- **Changes in Institutional Framework**: Forced mostly by types and nature of newer and mature learners groups, many institutions will become open to nontraditional learners, offering wide-variety of flexible duration, modular courses, allowing freely to move on and off campus; private providers will started compiting with traditional providers of Education.

- **Changes in Technological Framework**: availability of faster, versatile, bigger and more interactive international technologies will soon become the backbone of the teaching-learning process.
- **Changes in Financial Framework**: Government will no longer be the sole financier of education. Coupled with this, would be the demand to loosen the Government Control on the educational process.

The entry into the 21st century is closely tied to the epoch making changes originating from the process of transition from the industrial to the post industrial or information society. The trend of the forces of change indicates that the education system is changing from the provider-led or teacher-institution driven system to the consumer-driven or learner-centric system of education. With the introduction of open and distance education in the pattern of higher education, this process has already started the world-over.

In the remaining part of my speech, let me present –

1. The communication technology scenario as it affects the teaching-learning process.
2. Transition of the educational system that might be essential for going over to a new paradigm appropriate to the information society.
3. Emerging paradigm.

Bill Gates, in his book 'The Road Ahead' said "We are all beginning another great journey. We aren't sure where this one will lead us either". He is one of the many who are changing and shaping our future, particularly in the field of communication technologies. When long-term projections and predictions are uncertain, what is left logically is the search of likely directions that are descernible. This is no doubt, an exercise, full of subjectivity, and will be closer to the future reality depending on the scientific, rational and holistic approach one takes. Let me attempt to give my own vision and analysis of the new paradigm of education for the 21st century.

4. COMMUNICATION TECHNOLOGIES

During the last decade or two, extermely rapid changes have been taking place in the fields of computer and telecommunication sciences. Computers have gone through generations and the computer experts inform us that we are in the fourth generation computer- age and will soon enter into fifth generation. Their computer models are changing after every year or two, making the earlier ones old and out of fashion, and the new ones are more versatile, fast and les costly. In India too we are now entering the person: computer era with the launching of Pentium for below Rs. 30,000/-. The industry and technologists believe that a good PC will soon be available for the price of a TV. Software development has become one of the biggest knowledge industries in the world and India has great potential expertise and scope in this field.

Telecommunications sciences have also made rapid progress. Starting with the telephone and radio, it has now entered the age of satellite communication with TV and networks. The Internet, the network of networks will soon cover the entire world. The origin of Internet was at Stanford

University and MIT in USA during the 1960's, when researchers connected their computers for sharing resources- the computers and their calculating capacities. It was also used for exchanging messages and documents. This was the birth of network and e-mail. Interent soon became a reference medium, where research papers could be read by any one on the network. World Wide Web (WWW) has' brought the internet into the consumer marketplace since 1990. It is already used by 2.4 crore households in 1995 the world over and may treble by 2000. It is used besides academic research and education, for work communication, entertainment, business, shopping etc.

During the next five years, India is aiso going to enter the area of **SATCOM** with extensive e-mail, and network facilities for every major town and city. Efforts are a foot to develop educational networks for training and education and for developmental! communication, that would reach upto block/taluqa level and then on to the circle and village level. One of the proposals under consideration of the MHKD is the network for training 30 lakh primary teachers in 16 regional languages through the distance education mode. Such a mass training programme needs a SATCOM network with uplinks at many resource locations and receiving-end rooms in every city, town and village.

The direction of development in the telecommunications is to develop electronic communication networks that could transmit data, images and sound ultimately of transmission quality allowing personalised and group interactivity. The digital technology with compression techniques is emerging as the new mode that will enable us to integrate computers, television and telecommunications on a single platform. This will integrate not only the three types of industries namely, computers, television and telecom but also offer facilities such as video/audio conferencing, direct to home services, computer conferencing and communication, internet connectivity etc.

Business and commercial applications of the Information Technologies (IT) and market forces are likely to extend the use of ITs by enterprising new ventures. Our concern in the field of education is to consider, how the personal and mass communication technologies (CTs) could be used effectively for carrying out the teaching- learning process by creating virtual or distributed classroom, synchronous and asynochronous Interactivity amongst and between learners and teachers and experts. One • of the major applications emerging in this new area is the integration of computer sciences, tele-communication sciences and cognitive sciences leading to products, which are called ***'Knowledge Media'***. These are effectively digital multi-media products using artificial intelligence, which creates virtual reality that will help learners in various training and educational contexts.

5. INDIAN SCENARIO

Many universities from developed countries such as^ UK, Australia are now offering their educational programmes in India by developing partnerships with local institutions and using internet to interact with students. The areas are mainly management, computer education, technology, etc. where learners are ready to pay high fees to the tune of a couple of lakhs per year. The programmes have in India the credibility associated with a western degree. They will also have international acceptability for the quality and standards they profess to maintain. This

offers direct competition to the Indian education system on Indian soil. The issue of quality and standard of an Indian degree and the value we give to the student through our education is becoming the immediate and major concern in the country.

The open and distance education system is already well established with IGNOU as the apex body currently covering seven state open universities. Along with 50 Correspondence Course Institutes, they are enrolling 13-14% of the 60 lakh enrolment at the tertiary level. Open universities have developed a model of education in which pedagogically well designed and developed self-instructional materials are produced for various programmes; and academic services are offered through study centres at or near the learners' residence or work-place. Extensive use of modern CTs to communicate educational programmes to the learners is giving opportunities. to the DE institutions to remain in the forefront of the new educational secnario.

Department of Telecom (DoT), Ministry of Human Resource Development (MHRD) and distance education (DE) systems in the country are proposed to establish communication networks through teleconferencing, broadcasting and computer networking to cover the whole country and extend access to[v] the interior of rural India. Open and distance education will then have newer methods of extending the best of expertise from anywhere in the country to any learner at any location. This will change the entire scenario of education over the next 5-10 years.

6. THE SYSTEM OF HIGHER EDUCATION

The system of education in India has a long tradition dating back to the period of Nalanda and Takshashila and even earlier to the Gurukul System. A student used to go to a Guru to learn according to his needs. After learning, whatever the teacher had to offer, the learner would move to another teacher for further and higher education. Teaching- learning was very personalised and teacher centric and cans be described as the *'personalised teacher-centric'system.* The whole scenario changed with the advent of the modern industrial age and, India, during the 19th century under the British rule, adopted the western system of university education. Now we all know intimately the collegiate and university education system.

The higher education system could be characterised by the four structural elements, namely, (Davis I995)

1. Discipline or professional field based expertise.
self-instructional form by editing it with appropriate pedagogical inputs. Multi-media in the form of audio, -video, Radio, TV, CAI etc. are used at present marginally; but with the availability of modern CTs, the non-print component will be increasing rapidly. Even self-instructional materials (SIMs) can be put on electronic media and communicated through a network to the student. Learning is essentially self-learning, achieved by interacting with SIMs and local experts called counsellors at the study centre located in a nearby educational instituion. Formative and summative evaluation is organised by the university, formative through local counsellors trained for distance teaching and summative centrally, and on the basis of student ' performance certificates are awarded. The student is expected to be given complete freedom to choose his/her courses or course-combinations. This is achieved by modularity and flexibility which enables

him/her to learn at his/her own convenience and pace. The system aspires to give full autonomy to the student and is, therefore, described as the *learner-centric system.*

As an apex body IGNOU, under the aegis of the Distance Education Council, is developing network of open and distance education, by pooling the best programmes and enabling the member open universities to adopt or adapt or translate the courses and deliver them in the territory served by the university. DEC is entrusted with the task of maintaining quality standards in the distance education programmes - both in their development and delivery. A little reflection on the situation developing will reveal that we are developing a system of distance education that would share the resources and expertise as partners and would give learners an opportunity to learn a wide variety of courses from different providers of education by maintaining high quality and standards. We would be soon offering extensively, as CTs are used more, a network expert support to learners all over the country.

The teaching-learning process is also getting a distinct nature, appropriate to the autonomous learner by using multi-channel delivery. The learning, as incorporated in the design of the educational programme, has to take into account the following channels.

a) personalised learning at home occurring due to interaction with SIMs, counsellors guidance and other learning resources

b) experiential learning at work place achieved through actual practice and interaction with fellow workers and seniors, and

c) social learning in the community obtained by participating, as a part of learning programme, in the social and group activities in the community around to solve various problems or issues faced by the community.

The network support to all these channels of learning is offered through Reasource Centres such as study centres, libraries, special institutions, training programmes, teleconferencing facility, etc. The system of higher education emerging could be described as a *learner-centric networked system* of education.

7. EMERGING PARADIGMS

By considering the developments going on, I believe, within the next 5-10 years, a Communication Network will get established that would give access to every town and city having a high school or a college. India will certainly enter into satellite communication on a wider scale with data, vidio, audio communication giving possibility of creating teleconferencing, distributed or virtual class-rooms, direct computer communication etc. giving access at all places and in many homes and the interactivity that is now possible on university campuses. The falling costs of electronic technologies will make it accessible to a large numbers and the deprived ones would need social and state support which would hopefully be forthcoming. Open Education Network (OPENET) linking physical and intellectual resources of all the institutions will be a reality; and experts, teachers and students would be able to

communicate over e-mail and browse through Internet on the computer terminal for worldwide information and courses.

The total university system of education, I visualise, will have to undergo a major transformation. The discernible basic changes in the *networked system* would be :

1. From teaching to learning. Self-learning skills will be a basic education of everyone.
2. From teacher and institution autonomy to learner autonomy.
3. From an almost synchronous teaching-learning process going on in the campus in a 'class-room' to asynchronous and separate tele-teaching and learning process.
4. From on-campus Class-Room teaching to home, work-place and community based learning processes.

The transition from the existing institutional pattern of education to a networked system of education will open out to the learners at or near their home courses and programmes from the best of experts and educational institutions from India and abroad. The beneficiary is the student, who will have easy access to a vide variety of course to choose from and plan his/her career by choosing appropriate courses and learning programmes. He/she will need advice and guidance from teachers or counsellors. The roles of a learner, a teacher and an educational institution would change redically in the learner or customer-led system of education. The networked system would obviously have:

1. ***Providers of Self-Instructional Packages of courses and programmes***. Besides the conventional institutions many non-conventional institutions, organisations and groups will offer their courses on the network.

2. ***Resource Centres and Delivery Centres*** where educational resoruces and academic services would be available. Existing institutions as well as many other— private as well as public— may start offering multi-media learning services and facilities to the community around.

3. ***National and International agencies for accrediting and quality assessment of*** the educational programmes, provider and delivery institutions for guiding customers or learners.

4. Agencies for academic credit banking and awarding certificates.

In this context, I would like to inform you a new development in which I participated recently as a head of the Indira Gandhi National Open University. With the support of Commonwealth Secretariat, the Commonwealth of Learning (COL), an agency established by the Commonwealth countries to promote access to high quality education to the students from Commonwealth countries, particularly the developing ones, organised a meeting in November 1996 in London. „It was attended by seven open universities from Canada, Australia, India, Sri Lanka and Bangladesh. In the meeting it was decided to offer Commonwealth Management Programme consisting of common curricula through 64 courses leading to various Diploma and

MBA degrees. The courses would be contributed by the participating open universtiets; they would be accredited by the COL and offered by the open universities in their own countries. In other Commonwealth countries, the COL would establish partnership with local or nearby agencies or institutions to work as delivery institutions. The award of a degree would be given by the univeristy with the approval of the COL. A Student from India would then be able to choose courses from 5-6 provider universities and will get a degree recognised by an international agency.

The *networked system* of education will change the roles of every actor in the field of education. The learner will have to become a life-long learner, combining learning, working and living. The learning process at present dominated by memorising, reciting, disputing, questioning, reproducing will change in the process of exploring, analysing, synthesising, representing, communicating, team-working, judging etc.. Learners will take up the issue or problem based learning to tackle the problems faced by them in life and work. The role of a teacher will obviously change. A teacher will be the developer of multi-media self-instructional packages appropriate to various knowledge fields with different contexts and backgrounds of learners. This course would be available to learners on network and it will be the responsibility of the teacher to keep the course most up-to-date, modern and relevant to learners by remaining constantly in touch with the development of knowledge and responses of students.

With a radical change in the teaching-learning process, places and channels of learning and the delivery mechnisms, the institutional sturctures and functions will undergo radical changes. The concept of a university itself needs redefinition in the emerging scenario. Education is becoming a life-long process and will be inseparably linked with living and working. In tl. recent Delors Commission Report published by UNESC.X the four pillars of education are identified as the basic framework for global curriculum. These are :

- Learning to know, by having a broad overview of things and the skills to work in depth on selected fields, learning to learn and thereby benefit from the opportunities to learning throughout life;

- Learning to do, by acquiring vocational skills and the competencies to work in different situations and to work in teams;

- Learning to live together, and appreciating other cultures and people, respecting pluralism, peace and managing confilict; and

- Learning to be, so as to better develop one's own personality, acting with autonomy, judgement and personal responsibility.

It is the continuing activity of any autonomous educational institution to change and reframe the curricula to suit emerging needs. The future networked system will obviously need packaging of curricula into courses in a completely different way, with more flexibility and modularity; and each module catering to the various competenices needed by the learners. Demand for freedom and automony in curricular choice and its utility is going to be built up from the learners. The

faculty of the university will have to respond to such demand in the near future. This calls for bold, visionary and innovative leadership in the university system to march ahead on the path of globalisation in the emerging paradigm.

Finally, let me drawn your attention to the study published by OECD in 1995 in which six principles are indentified which will dictate the learning in the 21st century. They are:

- **Learning in the 21st century** will become the essential part of everyday human activity;
- Access to learning in the 21st century will need to become as near universal as possible.
- Learning technologies in the 21st century will need to respond flexibly to learner needs;
- **Learning suppliers in the 21st century** will need to adapt their ways to meet the changing demands of their clients and to maximise the potential of new delivery techniques;
- Governments in the 21st centrury will need to play an active role in supporting the learning infrastructure, but should not attempt to control the learning agende; and
- **Learning in the 21st century** will need to be a collaborative enterprise

The emerging paradigm and perspective which I presented before you, I believe, is not very distant but is likely to be realised within a decade or so and at the beginning of the 21st century. Any flight of imagination will be found wanting to describe what is in store by the middle or latter part of 21st century. This young university, youthful, energetic and young in its faculty is idealy suited to accept the challenges of thenew times, I hope and pray that North Maharashtra University will have a major share of credit in the educational reforms and transformation that is currently sweeping the whole world.

Dear Graduates! while complementing you on this auspicious occasion for your academic success and achievements, I would like to make you aware that, most of you are going to spend your working life in a fast changing scenario of the 21st century. You would be the main actors in shaping your future and that of the society around you. Learning does not end with getting the degree today. You are now embarking on a road of life full of changes and challenges. You can face them successfully, if you transform knowledge into actions and see that every action of yours is guided by knowledge. Life long learning should be you *dharma.* Let me wish you the best success in your future life.

Once again, I thank the Vice-Chancellor and his colleagues for giving me this honour and pleasure of sharing my views with this august gathering.

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