2.8 Nagpur University Convocation Address on
Ensuring Access and Equity in Professional Education – Alternatives through e-education
-2008-

Abstract

In this convocation speech, the burning issue of the day, namely the tuition fees of professional courses, has been addressed. The problem began when the state government had no choice but to allow establishment of non-grant colleges and fixed fees with a provision for management seats. The high cost of tuition fees has risen beyond the reach of the common student, however talented and motivated the student may be, particularly girls. Consequently unethical practices grew to the determent of building a just and fair society. Since education is recognized as a great equalizing force to reduce disparities in society, it is essential to reconsider the policy pertaining to fees and remedy the self-centered attitudes that are weakening the entire social fabric. What is the way out? Will application of information- communication technology reduce the unit cost problem and offer facilities to offer education of a superior quality? Very interesting developments in this direction have taken place in the field of education, and technologies are available. A system of e-education, and distributed classrooms are among the technologies that can supplement and complement the current practices of education and can provide opportunities to offer low cost, high quality and relevant education. (By: LA)

2.8 NAGPUR UNIVERSITY CONVOCATION (2008)*

Ensuring Access and Equity in Professional Education
- Alternatives through e-Education

Honorable Chancellor, Vice-Chancellor, Deans, Members of the Senate and Academic Council, graduates receiving degrees, faculty and staff of the university and colleges, ladies and gentlemen,

I would like to thank sincerely the Chancellor, Vice-Chancellor and authorities of the university for inviting me and giving this opportunity to address the convocation today. This is the second time I am delivering convocation address in this university.

Nagpur University is one of the senior universities of Maharashtra, and has great traditions. It has contributed immensely to the development of this Nag-Vidarbha region. I would like to complement the university and faculty, affiliated colleges for the good educational services they have rendered to the students and society; and wish them all the best success in their educational endeavor.

In this convocation speech I would like to address the burning issue of the day; the tuition fees of professional courses, which have already moved beyond the reach of middle and lower classes, and has created frustration and anger against the system, particularly with privatization of education. The situation is already explosive and we may face outbreak of it if the issue is not resolved appropriately.

High Professional Education Fees:

Let me put the problem in right perspective.

The State Government found it difficult to support the rising cost of higher education, when it has not addressed the issues of **universalisation** of primary and secondary education, not stopped school dropouts and not eliminated illiteracy and poverty. The State Government therefore allowed educational managements to start non- grant colleges and fixed fees with a provision of **management seats**. The managements have started **professional colleges** for the obvious reason that they are more in demand and parents are willing to pay higher fees. The State could not find any other way to give opportunity to a large number of students aspiring for professional education. This has resulted in a large investment in professional and technical education to the tune of Rs. 1500 - 2000 crores in Maharashtra. Facilities and standards of some of these colleges are quite good.

High Court and Supreme Court decisions and lack of clear policy on tuition fees has resulted in great confusion. When all the seats in a college are to be filled without a management quota, it is obvious that unit cost fees will have be charged from all the students by the non-grant colleges. The unit cost of engineering education is reported to be around Rs. 40 -75 thousand per student per year, and that of medical education is around Rs 2.5-3 lakhs. Let us assume that the cost calculations are correct and realistic. Considering the overheads and other costs, the professional education has gone beyond the reach of a common student however talented and motivated he or she might be. The worst sufferers will be girls since they remain the last in most of families to get education with high costs.

The state is finding a solution out of this situation by giving subsidy to medical students coming from weaker sections, and soft bank loan to merit students from economically weaker classes. Many eligible students who had studied hard are not able to take admission since it is beyond their reach.

Serious Consequences:

The adoption of Karnataka pattern with management quota by the Government of Maharashtra allows cross-subsidization of education. However, the past experience of management quota of seats is not good. Both these factors, high fees and unequal fees have led, to malpractices and lowering of quality and standards, besides creating ethical and **moral issues** vitally important in the field of education. Any educational system permitting and accepting immoral practices cannot hope to build a just and fare society. Fees unaffordable to the majority in society is therefore a vital issue and needs serious considerations.

There are many socio-economic consequences of far reaching nature of high tuition fees. Opportunities of professional education are now available to rich, and principles of social equity and justice are getting challenged. When education costs so much to an individual and family, it sets in money pressure on all in society; and spirit of social service and social commitment become the first casualty. The exploitative business culture that is generated in the society today is further strengthened and extended by the higher and unaffordable fees charged for education.

In old Indian culture, education was fully supported by the society and the state, and was given the highest respect and reverence. Total development and progress of human society is dependent on the use of knowledge in various socio-economic and cultural activities. In this 21st century, we are now witnessing emergence of knowledge- based society. Education is the way for acquisition and application of knowledge for the benefit of individuals and communities. If education itself goes out of reach of poor and weaker, the society will suffer further division and fragmentation on the lines of poor- rich and rural-urban. It is well recognized and socio-economic studies have shown that education is a great equalizing force and helps reduce disparities in society. It is therefore essential to reconsider the total policy of charging unit cost fees and cross-subsidization through differential fees, and to evolve social and state supported system of education, which could promote equity and justice. Such policies and strategies alone will strengthen our Indian heritage and Indian value system and help realize the Indian Constitutional goals and values of liberty, equality and fraternity with social, economic and political justice.

In our socio-economic development we followed a model of social-welfare based on democratic and socialistic principles. We are now swinging **to** the other end, and are generating self-centric attitudes and tendencies weakening entire social fabric. It is therefore essential to search for new solutions; new paradigms to address our current problems,, In this endeavor **'more of the same'** will not help.

Way Out:

As an academic, who has also served as vice-chancellor for quite a long time, I must share the responsibility of promoting the policy of 'no-grant colleges'. During my tenure of vice-chancellorship of University of Pune, two decades back, first set of engineering and medical colleges were permitted by the state of Maharashtra. However, I have also the satisfaction of

building Open University in Maharashtra and initiating B.Ed, a professional education program. This Open University program has saved capitation fees of many to the time of about Rs. 5 crores yearly.

Open and distance education has expanded substantially and 20% of the total enrollment in higher education in India is in ten Open Universities and sixty Distance Education Institutions of duel mode universities. Open University education now includes professional degree programs in areas of business management, education, engineering, nursing, information technology; and diploma & certificate programs in many technical and vocational courses. The open universities have evolved successfully skill training and competency development programmes by using facilities of existing colleges and industrial work places. The nation has not only accepted this mode of non-formal education, but has now adopted policies and programs to expand coverage of higher education from the current rate of **6** % to 10-15% of the corresponding age group by employing open and distance education in order to compete with the developed countries whose coverage is abound 40%. Unit cost of professional education given by Open University is ranging between 30-50% of that of formal university unit cost; it is more for hard technology courses and less for soft technology courses. In some cases of general courses, unit cost is as low as 10%.

The Open Universities have succeeded in developing best quality instructional materials designed pedagogically for self-instruction and achieved delivery to students with student support given through local study centers.

The Open University programs, however suffer from:

i. Acceptability by the youth, who preferred to go to a college for socialization besides professional education.

ii. Effective interaction between students and teachers at local study centers, which is rather weak, since local teachers are honorary and cannot give enough time.

iii. Student support system needs to be improved with more student- teacher/expert interactivity.

The deficiencies have arisen because of weak communication linkages employed today.

The problem before us is to develop alternatives in professional education that would be

i. Acceptable to all.
ii. Equally or more effective than Campus-based education.
iii. Efficient in educating and training, and
iv. Economical and affordable to majority.

Solution to the problem is coming up from the tools and technologies of this century - the Information Communication Technology.

Before proposing new alternatives, let me list the cost components of the professional education.

The main cost factors are:

i. Lectures by experts/teachers class rooms and teachers.

ii. Lab experiments with equipments (Labs, hospital/factory-shop facilities with teacher assistance)

iii. Infrastructure (buildings, labs, equipment, library, campus etc), and

iv. Management.

Campus with class and lab based education enables students to have interactions with teachers, experts and learning resources. Personal contacts and interactions enhance learning and cultivate professional values and motivations. The collegiality of the learning-teaching community is one of the important factors in cultivating professionalism associated with the discipline.

Alternative way out is through the application of Information Communication Technology for designing and developing a model of education that solves our unit cost problem and offers facilities that could make the new model or paradigm superior in quality and efficiency.

Information Communication Technology (ICT) Offerings:

All of us are aware of the Indian development in the field of IT. India is recognized all over the world as one of the leaders in IT. The Information Technology is entering in all walks of life and work, and is changing the way we communicate, entertain, work, market, bank etc.

This is very well expressed in the Report of 'National Task Force on Information Technologies (1998):

"Information Technology (IT) modernizes the economy, expands and deepens the possibilities in education, accelerates growth, creates large-scale direct and indirect employment to the educated youth, and boosts exports. If there is one single technology that can be applied right across all sectors of technology, all areas of administration, all levels of education and all types of services, it is Information Technology. Similarly, if there is one technology where India can emerge as a strong global player in the foreseeable future, it is IT.

IT is not just a technology, nor is it merely a new enabling tool for economics and education. Rather it will lay basis for a whole new global civilization in which Indian values and wisdom will play a defining role".

The nation has placed high aspirations and a goal of becoming Knowledge Super Power within the next 15 years. No country becomes a Super Power, unless common people are developed to the highest level of their competencies and capabilities, and empowered though tools and technologies of the age to enable them to participate in developments taking place. This can be achieved only through a right system of education for all.

There are many interesting developments already taking place. The UGC has started building an electronic network connecting all universities and colleges, and has undertaken

program of e-content creation. The content will be placed at the 16 mirror sites located at various places in India and could be accessed from any where through Internet. Indian Space Research Organization (ISRO) will be launching Educational Satellite (Edu Sat) by the end of2004 and will offer 54 channels of communication for broadcasting and broadband Internet connectivity. Its footprint will be all over India. ISRO has already taken up pilot projects to use EduSat for education in three states - Maharashtra, MP and Karnataka. Maharashtra pilot is in partnership with YCMOU for developing distributed classroom system with presentation or teaching room at Nashik and 100 receiving rooms all over Maharashtra. The Maharashtra Knowledge Corporation
(MKCL) has already created a network of 3500 Network Access Centers (NAC) covering 330 out of total 360 talukas of Maharashtra. MKCL has further developed web-based governance enabling administration of all educational functions in paperless environment; and has enrolled 5 lakh students within 15 months of its working. It has already given proposals to create virtual classrooms in colleges and universities by using broadband Internet; and offered digital college software that may enable university and college to go paperless within the next few years.

All these technologies are currently available; and can be used effectively for creating

i. Distributed classrooms in all universities and colleges wherein students and teachers can participate in lectures, tutorials, seminars and workshops.
ii. Educational technologies for storing and managing print, audio, video materials and their flows, for recording, sending/receiving any content to any one on-demand, for managing educational activities and interactivities and even for personalizing education to know and follow progress of a student out of a mass of students registered for a program.
iii. Grid networking architecture connecting computers for using processing power of all the available networked computers and flow of information enabling development of Knowledge Grid,
iv. Central Database of content, which could be created and contributed to by experts and experienced teachers from Maharashtra and outside.

Currently technology is getting developed which will enable us to create small units of content called granules of content, which could be put in a database by attaching multiple tags so that the content becomes reusable in different contexts, for different purposes and processes of learning. Similarly personalized technologies are getting developed which will allows '360 degree view' of a student to a teacher.

This type of meta-databases with personalization technologies would enable a teacher to offer personalized curriculum to suit needs and requirements of a student and prescribe learning path to achieve goals of learning This is offering IT driven scenario not possible earlier, and can offer just-in-time education to learners who want to combine learning and working. In a way IT makes it possible to offer **not only access but also success.**

I am not taking you to a realm of fantasy. Whatever is described earlier is doable within the coming few years and some of the software is already developed and implemented.

In brief, the **broadband Internet** with **grid network** would enable us to create educational programs 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 processes and models

IT Enabled Professional Education:

If **distributed classrooms** are created in all professional colleges and universities through broadband connectivity, we can offer e-Education by using Educational and Personalization Technologies. A system of e-education so created can supplement, compliment the current practices of education, and can also give opportunities of offering low cost, high quality and relevant education.

Some of the processes of e-Education could be as follows:

1. **Teaching** could be done by a group of teachers through distributed classrooms. Some senior teachers and experts can give e-lectures, and others can work as local tutors and guides. This will save a lot on repetitive lectures, besides making them available to students at their convenience. This also makes best experts and teachers available to all. The Teacher Group can offer supplementary reading, assignments, give feedback to students and offer on-line testing and evaluation for formative development and achievements. Since all repetitive tasks are eliminated, cost of teaching could be substantially reduced.

2. **Existing infrastructure** could be used by more students, since most of the networked based services and information could be accessed form outside colleges. Many working places, which can offer practical training and guidance, could be made a part of local educational network, and used for educating. Network and personalized software can follow teacher's guidance and student's progress. Slowly investment on **brick & mortar** should be reduced and **clic and portal** be increased.

3. **Lab / Field / Hospital work** is very essential for skills and competency development, and has to be retained as it is. However, many experiment, exercises, operations could be shown and made available on multi-media CD or on servers. Virtual Lab experiments could be created by using simulation technologies, and actual cost of training could be reduced as in the case of airplane pilot's training by using simulators. Laboratory use and instructor time per student could be reduced appreciably.

4. **Management** of teachers, students and their activities could be done through the software and by using communication devices. Examinations & testing could be on-line and on-demand, and self-paced by students and teachers so as to achieve better results.

5. **Development of Content** of various courses in e-format is the key factor in e-Education Static content based on universal facts, information and knowledge could be developed in multi-media-formats. Content could also be developed dynamically through lecture-interactions, seminars, workshops, student assignments and teacher projects. Creating huge content base is a collaborative exercise. A mechanism has also to be developed to assess quality of instructional content and its up-gradation continuously.

Cost Considerations:

From our experience of working with open and distance education system, we estimate that unit cost of profession educations could be easily brought down to one- third.

The IT infrastructure costs are quite less as compared to the building costs. Further the IT appliances and interactivity costs are falling rapidly and will be affordable if **economies of scale** are used.

In the e-education system spin offs are many. Quality education, availability of best teachers & experts to all, personalized guidance and follow-up are some major benefits that should make the new system acceptable and superior.

Cost could be further reduced through social and state subsidy and students' work. Society can allow professional students to work and study in industrial and institutional environment, and offer their expertise & facilities. If courses are organized suitably, then students, after initial preparation, can learn and earn in related work places. The state can subsidize in IT infrastructure building, content development and subsidize education of the poor. A situation could be developed in which learning, working and earning is made possible in e-education network environment.

Maharashtra Knowledge Network - A Proposal:

We therefore propose that the Government of Maharashtra should undertake a **'Maharashtra Knowledge Network'** project in a mission mode. It should be collaborative and partnership program with participation of universities, colleges, industry, professional bodies and society at large.

The Pilot project will involve developing within three years, a framework and infrastructure and programs having components of:

i. **Maharashtra Educational Network** - connecting all institutions and their classrooms through broadband connectivity.
ii. **Maharashtra Knowledge Grid** to ensure content flows to anyone anywhere and anytime.
iii. **Granulated Object Based Content in a Meta-database at a state level.**
iv. **Promotion of consortia of colleges and universities**
v. **Quality assurance and accreditation mechanism**
vi. **Credit banking and certification mechanism for students to take education from different universities /colleges.**
vii. **Movement for giving services to weaker** and disadvantaged for ensuring equity, justice and quality for all.
viii. **public-private partnership** for creating self-employment for graduates in various fields of human activity.

Such a state level e-education framework could help in addressing the problems associated with high unit cost based fees. By employing ICT and ensuring social and state support, students could be changed equal fees for professional education, which could be as low as 25% of the current unit cost fees.

The framework and infrastructure could support all universities, colleges, teachers and learners in their pursuit of knowledge and development. The network would also help weaker and disadvantaged colleges & universities to form a consortium, and offer best educational services to their local students by offering personalized and localized services.

A sound financial model could be employed in the Network, which will enable universities, colleges and the state to get soft loan and build the network. By using the network for on-campus as well as for off-campus students, university and colleges can pay-back the investment for networking. An example of about 100 colleges, who participated in MKCL program and earned about Rs.3 crores, shows the way out to reduce reliance on the state grants.

Knowledge Based Society - Academic Leadership:

We are now entering into new Age driven by IT. The knowledge based society is now getting formed. This society will be completely networked; and individuals, groups and institutions will be communicating through IT appliances, and their interactive information will be stored in network. Accessing and analyzing the information gives useful knowledge, which could be converted into value addition or wealth. With omnipresence of information and availability of IT tools and techniques, it is possible to design and develop processes, activities and functions to support social activities and to ensure participation of people.

The major characteristics of IT are its capacity to ensure:

i) Globalization
ii) Decentralization and localization
iii) Personalization
iv) Transparency and openness.

Teachers and educational managers can develop systems, which are accountable and transparent, allow democratic participation, empower people through decentralization & participatory decision making, and lead in social and economic changes that ensures caring and sharing with communities. Vested interests at local and global level may not allow all these changes so easily. Teachers along with their learners can participate in real development processes, and mobilize development-centric groups and communities After all education is itself a development process. Such a role is a center-stage role, and could be acquired by the academic community. Knowledge based society needs life-long- learners and formation and development of learning communities with specific developmental interests. UNESO report has mentioned this as the major function of the universities in 21st century.,

Dear graduates you are now entering into the world of work, and had to find out your vocation and build your career. Education does not stop here. Now starts your learning and life-long education. You are going to face challenges of Information Society. Many of our experience and practices of 20th century may not be of much use to you. You have to grow continuously through your learning and personal development, and search for job and career opportunities locally as well as globally.

Dear graduates, you have many challenges and opportunities before you. I am sure, the skills, competencies and functionalities you have aquired in this university, and knowledge you earned during your study here will guide you in your future career development.

Let me congratulate you on your graduation, and wish you all the best success in your life and career.