DRAFT REPORT OF

WORKING GROUP
ON
HIGHER EDUCATION

11TH FIVE YEAR PLAN

Government of India
Planning Commission

New Delhi

Report on

Working Group on Higher Education - 11TH Five Year Plan

CHAPTER –1

INTRODUCTION

A little more than half a century has passed since the Government initiated a planned development of higher education in the country with the establishment of University Grants Commission in 1953.

The policy for the development of higher education has been mainly governed by the “National policy on Education” of 1986 (as modified in 1992) and its Program of Action 1992. The 1986 policy and Action Plan of 1992 were based on the two land mark reports namely, the “University Education Commission Report” of 1948-49 (popularly known as Radhakrishnan Commission), and the “Education Commission Report” of 1964-66, (popularly known as Kothari Commission). These two reports, in fact, laid down the basic framework for the National Policy of 1986 for higher education in the country.

The Radhakrishnan Commission on University Education had set up goals for development of higher education. While articulating these goals, the Commission put it in following words:

> “The most important and urgent reform needed in education is to transform it, to endeavour to relate it to the life, needs and aspirations of the people and thereby make it the powerful instrument of social, economic and cultural transformation necessary for the realization of the national goals. For this purpose, education should be developed so as to increase productivity, achieve social and national integration, accelerate the process of modernization and cultivate social, moral and spiritual values.”

The National Policy on Higher Education (1986) translated the vision of Radhakrishnan Commission and Kothari Commission in five main goals for higher education, as enumerated below; which include Greater Access, Equal Access (or Equity), Quality and Excellence, Relevance and Value Based Education.

a) Greater Access requires an enhancement in the education institutional capacity to provide opportunities to all who deserve and desire higher education.

b) Equity involves fair access to the poor and the socially disadvantaged groups.

c) Quality and Excellence involve provision of education by accepted standard so that students receive available knowledge of the highest standard and help them to enhance their human resource capabilities.

d) Relevance involves promotion of education so as to develop human resources keeping pace with the changing economic, social and cultural development of the country; and

e) Value Based Education involves inculcating basic moral values among the youth.

The Action Plan of 1992 included schemes and programs which were directed towards expansion of intake capacity in general, and that of the disadvantaged groups such as the poor, SC, ST, minorities, girls, the physically challenged persons, and those in the educationally backward regions, in particular. Thw Schemes/Programmes were designed to improve the quality through strengthening academic and physical infrastructure, to promote excellence in those institutions which have exhibited potential for excellence, and to develop curriculum to inculcate right values among the youth.

The University Grants Commission came into existence in 1953 and the UGC Act came into force in 1956 with the objective of promotion and coordination of university education and for determination and maintenance of standards of teaching, examination and research in universities. As per its mandate UGC has been taking steps, through various schemes, to promote quality education having regard to the concerns of Access, Equity, Quality, Excellence, Relevance and Value based education.

The Indira Gandhi National Open University (IGNOU) established by an Act of Parliament in 1985 promotes Open University and Distance Education System in the country. It has widened the access to higher education by providing opportunities to larger segments of the population by adopting integrated multimedia instructions. The reach of IGNOU has increased substantially by the use of Gyan Darshan, an educational TV channel and Gyan Vani, FM radio Channels.

Significant contributions in the field of higher education have also been made by research councils like the Indian Council of Social Science Research (ICSSR), the Indian Council of Historical Research (ICHR), the Indian Institute of Advanced Studies (IIAS), the Indian Council of Philosophical Research (ICPR) and the National Council of Rural Institutes (NCRI). These Research Councils, which function outside the university system, promote research and creativity in important areas like social sciences, history, philosophy and interdisciplinary areas.

Chapter –2

THRUST AREAS OF HIGHER EDUCATION DURING 5TH TO 10TH FIVE YEAR PLANS

Analysis of the past Five Year Plans indicates that, there have been continuous efforts to strengthen the base by developing infrastructure, improving the quality through several programs and schemes, introducing reforms in content and evaluation and encouraging generation of knowledge through research. The focus of fifth five-year plan was on infrastructure development, the sixth plan onwards the focus shifted to consolidation and quality improvement. The Seventh Plan laid emphasis on research and academic developments. It was from this plan onward that the development centers of excellence and area study programs got special attention. From the Eighth Plan onward, the need for differential funding was recognized. Under this plan, it was envisaged that the developing departments would be provided necessary funds to bring up their facilities and activities to an optimum level for their teaching and general research pregrammes. The Ninth Plan aimed at gearing the system of higher education to meet the challenges arising out of the major social, economic and technological changes. The focus of Tenth Plan was aimed at quality and relevance of higher education, research and development, management in financing and the use of the new information and communication technologies. The Tenth Plan provided the basis for higher education in the 21st century.

Table 1 - Plans and Thrust Areas

Plans	**Thrust Areas**
Fifth	• Construction of academic buildings, library, staff quarters, teachers' hostel, students' hostel, study homes, non-resident students' center; • purchase of books, journals, equipment; • appointment of additional teaching staff, technical supporting staff etc;
Sixth	• Improvement of standards; • regulation of admission; • restructuring of courses for practical orientation and greater relevance; • centralization of instrumentation and repair facilities; • make extension as an integral part of education; (low priority was given to expansion of educational facilities by way of new universities, centers for postgraduate studies, new department and to construction/extension of buildings involving brick and mortar.)

Seventh	• Creation of research and other centralized facilities at selected centers for the benefit of a group of institutions in the region/country, • encouragement of academic mobility and cross-fertilization of ideas with a view to inculcating the feeling of national integration by providing special assistance for faculty housing/complex and hostels, • restructuring courses at first degree level so that they become relevant to the local needs and environment and increase the area of employability of graduates; • prioritisation of programs intended to achieve the national objectives; • development of Centers of Excellence; • Optimisation of use of the existing facilities in the universities/colleges specially physical facilities.
Eighth	• Strengthening of existing postgraduate departments in terms of laboratories, workshops and library services; • Opening of new specialized courses and departments, In case of developed , with an inter-disciplinary approach provided they could be sustained by existing facilities; • In case of developing universities, new departments and courses only if the need is justified; • Viability of courses, departments etc. so that those courses that have lost their relevance or are outdated could be dispensed with and teachers in such subjects could be retrained.
Ninth	**Relevance and Quality of Education:** • Career development by encouraging the relevant courses with professional focus; • Modification in traditional courses to make them application oriented; • Encouragement to universities to develop basic theoretical understanding of discipline to ensure that the theory and practice are blended and integrated; • Focus on hands on experience; and • Addressing the public concerns about downslide in the quality of education by focusing on the quality of education rather than on quantitative expansion. Access and Equity: • Paying special attention to institutions of higher education in backward areas, hill areas and border areas in order to remove regional imbalances;

	• Addressing the higher education needs of under-represented social groups including the SC/STs, women, handicapped and the minorities; and • Focus not only on quantitative expansion but also on qualitative development of institutions of higher education in the areas catering to the above groups. University and Social Change: • Encouragement to universities to develop a greater emphasis on non-degree programs in order to meet the expectations arising out of changes that are taking place in the society; • These activities to be made the responsibility of every department; while the departments of adult and continuing education would be the focal point for social change function and • Major thrust to be given to program development for women studies and centre for women studies shall be essentially inter-disciplinary. Management of Education: • Support for streaming the university management system; • Assistance for academic, administrative and financial decentralization; • Autonomy of the Departments; • Autonomy of the affiliated colleges & institutions; • Developing in-house training facilities for non-teaching staff, rationalization of posts; increasing use of information technology in management; and • Establishment of College Development Council, workshops for college Principals, and improvement in backward and forward linkages. Resource Mobilization: • Focus on planning for internal and external resource mobilization; • Differential fee structure; • Enhancement in fees for foreign studies; and • Generation of revenue through increased university-industry linkages.

Thrust Areas in the 10th Five Year Plan

GENERAL : To achieve a profound transformation of higher education in order that it becomes an effective promoter of sustainable human development and at the same time, improves its relevance with closer links with the world of work and achieve quality in its teaching, research, business and community extension functions including life long learning.

SPECIFIC: To contribute to the transformation through improvement of the conceptions, methodology and practices related to:

- The relevance of higher education.
- Quality, evaluation and accreditation.
- Research and development.
- Outreach activities in business and community and life long learning.
- The knowledge and use of the new information and communication technology.
- Management and financing.
- Export of higher education, and reorientation of international cooperation.
- Strengthening of open and distance education system.
- Strengthening of research institutions.
- Mobilization of resources.

Proposals/Recommendations for 11th Five Year Plan

A Working Group on Higher Education was set up by the Planning Commission under the Chairmanship of Secretary (HE), vide order no. M-12015/2/2005-Edn. Subsequently, it was decided to constitute seven Sub-Working Groups on the following sectors of higher education:-

1. Central Universities
2. Deemed to be Universities
3. State Universities
4. Colleges
5. Distance Education
6. Quality of Higher Education
7. Research.

The reports of all the seven Sub-Working Groups are annexed (Annexure – I-VII).

The Working Group considered the recommendations of the Sub-Working Groups and its observations / recommendations are given in the subsequent chapters of this report.

Chapter – 3

POLICY PERSPECTIVE

3.1 On the eve of planning for the XIth Five Year Plan for Higher Education in India, it is incumbent to take stock of the contemporary global scenario education and the imperatives of both the competitive challenge as well as the priorities of distributive justice and equitable access in the growth of higher education in India. It is only through the blending of these twin parallel parameters that a proactive policy for ensuring inclusive growth of higher education in India has to be conceived and operationalised, which could withstand the challenges of competitive global environment without compromising with the exalted priorities of public policy.

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that to reorient higher education system to be vibrant, competitive, meaningful and relevant, It will have to grow both in terms of quantity as well as quality, mainly with a view to converting its vast population as asset, rather than a liability.

3. 2 The Paradigm Shift

- Today, the higher education system as a whole is faced with many issues of concern like financing and management, including access, equity, relevance and reorientation of program by laying emphasis on values, ethics and quality of higher education together with the assessment of institutions and their accreditation. These issues are of vital importance for the country, as it is engaged in the use of higher education as a powerful tool to build knowledge based society of the 21st century.

- Recognizing this requirement as also the basic fact that the institutions of higher learning have to perform multiple roles like creating new knowledge, acquiring new capabilities, producing intelligent human resource pool, Indian Higher Education system has to address itself to global challenges through channelising teaching, research and extension activities , and maintaining the right balance between the need and the demand.

- Higher education needs to be viewed as a long-term social investment for the promotion of economic growth, cultural development, social cohesion, equity and justice. In order to meet the 11th Plan aim of inclusive growth and to ensure genuine endogenous and sustainable development along with social justice and equity the higher education sector has to play a pivotal role, especially in generating research-based knowledge and developing a critical mass of skilled and educated personnel. Within this philosophical paradigm some of the issues pertaining to the higher

education system have been identified, that need to be seriously addressed for the balanced development of higher education in India.

- The globalized era has necessitated inculcation of competitiveness. This can be achieved only by bringing quality of highest standards in every sphere of work. Therefore, the quality of higher education has become a major concern as of today. Needs and expectations of the society are changing very fast and the quality of higher education needs to be sustained at the desired level. Quality would mainly depend on the quality of all its facets, be it the Faculty, Staff, Students, Infrastructure, etc. As such, all the policies, systems and processes should be clearly directed towards attaining improvements in all the relevant facets for the overall rise in the quality of education.

3.3 Broad Agenda For XIth Plan

Towards conceptualizing and operationalising the perspective of the XIth Plan based on inclusive growth of higher education in India, the agenda of the program of action has to necessarily incorporate the following dimensions:

3.3.1 Expansion Of Access

The Parliamentary Standing Committee in its 172nd Report has underlined the urgent need for broadening access to Higher education by expanding it and by making it affordable.

The Committee emphasized the special focus for improving access and equity in remote regions and geographically disadvantaged places.

The Committee recommended that the special programs for encouraging students from backward and Minority Communities to be prepared as their participation in Higher Education is abysmally low, as compared to their percentage in total population.

- Expanding the overall access to provide higher education to all those eligible.

- To ensure equity through equitable access to the deprived socio-economic strata of the society.

- Enhancing the quality of teaching and learning experience through use of information pathway.

- Setting up of new universities and colleges to increase enrolment.

- To increase the enrolment of women students by building hostels for women in metropolitan cities, semi urban and rural areas.

- Setting up of new colleges, aided by the Government, in backward, rural, and tribal areas.

- Access to good institutions and facilities.

The Parliamentary Standing Committee in its 172nd Report has recommended that participation needs to be improved manifold without further delay. More and more women as engineers, Lawyers, Professors, Architects could mould the face Of India to a great extent.

- Provision of more fellowships for women students, hostel facilities and creation of more infrastructure by the universities, to bring more women students in the realm of Higher Education.

- Imparting of good training in fields like special education by the Institutions, which may not be conventional academic in nature , may be looked at with different perspective.

3.3.2 Research

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that research needs to be closely linked with teaching for which scientific base in our universities needs to be strengthened that will attract not only talented students but also industry to our university laboratories.

- Developing a creative framework for combining the strengths of scientific laboratories, private initiatives and universities to start advanced institutions for undergraduate and post graduate science education.

- Twinning with R&D institutions and industries for symbiotic program.

- Promoting cross flow of teachers/scientists through interchange between universities and diverse research laboratories at national/international level.

- Expanding links with international educational & research institutions for enriching the students and faculty.

- Upgrading scientific infrastructure in universities and Inter-University Centres and providing easy access to research funding.

3.3.3 Distance Education

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that to make Open Universities more attractive and relevant, efforts be made to ensure quality of study material, timely dispatch thereof, dedicated teachers at the study centre, provision of necessary infrastructure, use of ICT, etc.

- The distance education system needs to be suitable geared so as to enable the manpower, which is already engaged in the gainful employment, to improve their academic attainments, so that they can compete for better prospects, vertically.

3.3.4 Quality

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that the issue of quality and excellence of higher education should have been given more importance in India. Academic ambience in our universities needs to be improved a great deal. Quality and excellence are the watch-words in today's liberalized environment. Making higher education globally competitive, therefore, cannot be postponed any further.

- The focus should be on enhancing the quality of educational institutions in general. In order to facilitate the growth of excellence in institutions with potential, the following programs /processes need to be developed with due emphasis and arrangements for appropriate monitoring:

  - Development of Multi-skills and Transforming Learning Patterns
  - Application of ICT in Quality Framework
  - Improvement of External Assessment Systems
  - Development of Internal Systems of Quality Assurance
  - Performance Based Quality Assessment Approach

Arising out of the experiences of the Xth Plan period, the XIth plan should focus on revision and modernization of syllabi, Upgradation of infrastructure, filling up of vacant faculty positions, enhancement of the competencies of staff and greater use of ICT. Following interventions would cater to the emerging needs of the 21st century learners.

- Evolution of mechanisms for understanding market signals
- Stepping up of support for vocationalisation of education
- Emphasis on the involvement of stakeholders

- Synergy/ Partnership with Industry

- Development of web- based programmes:

3.3.5 Faculty Development

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that the conditions of service, remuneration and career advancement of the teacher be linked with their overall performance. The Committee expresses its concern about large number of vacancies at different levels in teaching community. The Committee is of the view that drastic steps need to be taken so that students are not deprived of proper guidance.

- There is a need for provision of fully staffed, equipped and functional Academic Staff Colleges in all the Central Universities.

- Professional development of teachers in higher education needs to be a continuous and an on-going process for maintaining quality

- Vacancies in the sanctioned teaching posts must be urgently filled up all over the country.

- The refresher courses and orientation programs should be revised for, updating of the skills of the teachers in the respective fields, with coordination between the industries and the employers, where necessary.

- The faculty improvement program should be extended to computer faculty and such faculty members should be allowed to go to the industry to update their knowledge.

- Principals of colleges should be given training program in innovative leadership.

- Exchange of faculty members across the borders should be done for developing managerial skills.

- The facility of going on sabbatical leave for improving subject knowledge and skills should be extended to teachers of colleges as in the case of universities.

- Restructuring of service conditions and salary of teachers to maintain and retain the best talent in view of the lucrative offers available in the IT and management sectors.

- Financial support for faculty to present research papers abroad.

- Four to six months of sabbatical leave may be awarded for research work, projects, post-doctoral research, for completing doctoral thesis (for faculty who have not availed FIP) and for writing and publishing books and research articles.

- Colleges may be allowed to conduct the refresher courses.

- Three weeks of academic program conducted by institutions of repute should be recognized as refresher courses.

- To arrange for Technical training program for teaching and non-teaching staff to develop software skills.

- All affiliating universities may have academic staff colleges and labs are to be set up for them.

- There should be four faculty members for academic staff colleges.

- Academic staff colleges to be open throughout the year.

- Resource centre to be set up within the university. There should be a resource centre to cater to not more than thousand teachers.

- Academic staff colleges in State universities need to be strengthened.

- The universities and colleges to participate in promotion of Indian higher education abroad and to attract as many foreign students as possible to study in India.

3.3.6 Infrastructure Development

- The immediate task is to make proper investment for removing the backlogs relating to maintenance of physical infrastructure.

- Classrooms need to be equipped with modern conveniences, audio-visual equipments and quality seating arrangements for students..

- In view of the rising cost of books, journals and laboratory equipments, there is an urgent need to make adequate provision in the 11th Plan for capacity building in the libraries and laboratories in the universities. Similar provision may be made for the colleges affiliated to Central and State universities, particularly for those colleges, which offer post-graduate courses.

- The UGC's Inflibnet System also needs to be expanded to cover all State universities. The same facilities should be made available to the affiliated colleges, especially those colleges that offer post-graduate courses.

- Sports facilities in universities/ colleges. Need to be strengthened.

- Innovations in laboratory teaching need to be encouraged.

3.3.7 Curriculum Development

- There is a need for starting of interdisciplinary and integrated courses at under graduate and post- graduate levels with flexibility in choice of Courses and a system of credits that enable horizontal and vertical mobility/transfers for teachers. These courses need to be started in both science and social science streams and must be offered by the Departments of the Central Universities. Colleges should also be involved in curriculum development.

- The curricula should be revamped to reflect the need for national development with international benchmark.

- Creativity of teachers, research fellows, students and external experts should be harnessed in order to develop multimedia teaching material.

3.3.8 Use Of Technologies

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that we must exploit our ICT potential for its penetration to the Country remotest corner to expand the access to higher education.

- ICT has tremendous potential to extend and augment quality in higher education. Its full potential has not been tapped.

- Under the Eleventh Plan, Central Universities can lead this process by providing campus based wireless Internet facilities, 24X7 computer labs.

- In collaboration with corporate houses, a laptop initiative can be put in place for post-graduate and research scholars. This will greatly enhance equitable access to knowledge base

- Satellite uploading equipment for each Central University should be established.

- The State universities have fallen behind in modernizing their administrative machinery and introducing e-governance.

- Funds should be provided to State universities for ICT faculty.

3.3.9 Data Base Management

- There is a need to develop a comprehensive database in respect of all the Universities/Colleges. This would enable a transparent devolution of funds based on objective and comparable characteristics.

3.3.10 Development Of Intra-Lingual Facilities

- There is a huge need for reference materials in Indian languages. Large-scale efforts for translation of internationally reputed books and materials need to be taken up. The Central Universities can collectively generate these translations. Sufficient funds must be made available to Central and State Universities for this purpose. All classy material should be translated in Indian languages and funding has to be earmarked.

3.2.11 Special Scheme For Person With Different Abilities

- The access to higher education for personsaimed with different abilities is very low. The XIth Plan goal must be to provide all facilities for persons with disabilities in the higher education sector. Course based repository of books, films, learning materials in Braille, audio tapes, lectures in sign language must be developed for all Courses in the Central Universities, with a mechanism for dissemination of these in State universities and colleges. Some other schemes could be incorporated as under: -

    - Setting up of Departments on 'Disability Studies' in universities, which will evolve into centres for studies and research on inclusive practices.

    - Setting up a Chair of Disability Studies in Universities, in different departments as appropriate.

    - Strengthening of existing schemes of UGC with enhanced allocation to universities/colleges to ensure a disabled friendly physical infrastructure.

    - Grants to be provided to every university for setting up a 'Disability Unit', which will act as an 'one stop facility' for the differently able persons.

- All B.Ed. students may be asked to undergo training for teaching in any one of the streams of disability.

- Preparing Specialized teachers/Resource persons/ In-service teachers to undergo Refresher Courses- Strengthening of Academic Staff Colleges for the purpose.

- Curriculum Development for Special Education courses.

- All universities to have barrier free access to persons with disability.

3.4 POLICY AND PLANNING ISSUE

- Apart from the aspects discussed above, there are some more aspects that require decision-making at the level of policy and planning. The proper articulation and realization of the objectives of **Inclusive Growth of Higher Education,** as being envisaged under the XIth Plan, would require positive and affirmative decisions on following issues of great operational significance.

3.4.1 Coordination Among Standard Setting Bodies:

- Education is in the 'Concurrent List', subject to Entry 66 in the 'Union list' in the 7th Schedule of the Constitution. This gives exclusive legislative power to the Central Government for coordination and determination of standards in institutions of higher education or research and scientific and technical institutions. The coordination among various professional bodies is required to benchmark standards and supervise growth process in accordance with the demand. The accountability of statutory councils needs to be ensured at least in maintaining minimum standards in research, and recruitment of college faculty. There should be a uniform policy perspective for coordinating bodies.

3.4.2 Central Universities

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that Central Universities may be set up in the

remaining states of Northeastern region including Sikkim at the earliest.

- There are, at present, 19+(4) Central Universities under the administrative purview of the Department of Higher Education. Each Central University, established by an individual Act of Parliament, exercises autonomy in its academic and administrative affairs in keeping with the provisions of the relevant Act, the Statutes and the Ordinances made there under. Their entire maintenance and development expenditure is met by the Central Government. All the Central Universities are required to function effectively at national level, to help removing regional imbalances, to contribute a corporate intellectual life in the country and to further national integration. Their all-India character is reflected in admissions, appointments and the nature of the programs directed by them. The following measures are suggested: -

    - At least one State University in each state should be funded through UGC to the level of Central Universities.

    - The Central Universities would develop in such a manner that it will have national character in terms of faculty and students' participation.

    - All central universities must be upgraded as 'centers of excellence'.

    - The role for all Central Universities would be that of a nodal agency and would include generating research, teaching at postgraduate levels and providing academic support to state universities and institutions.

    - There is need for provision of fully staffed, equipped, functional Academic Staff Colleges in all Central Universities. This provision should be made under the non-plan scheme to provide 'permanence' of character.

    - 10 networking centres in Basic Sciences including Physical Sciences, Chemical Sciences, Life Sciences, Material Sciences and Mathematical Sciences need to be set up in leading departments of Central Universities.

    - Interdisciplinary Schools or Centres be started in each Central University, such as Centre for Child Studies (none exists in the country), Centre for Educational Studies, Centre for Robotics, Centre for Social Exclusion and Inclusive Policy, Centre for Studies in Cooperation for Indian Literature and Language etc. These Centres will be primarily meant for research activities..

- A Central Tribal University needs to be established in order to promote educational avenues for tribal population.

- Faculty of Medical studies needs be established in all Central Universities of North Eastern Region.

- Faculty of Mass Communication and Faculty of Fine Art and Music need to be established in all Central Universities.
- All Central Universities to have hostels for women students.

3.4.4 State Universities

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that this ceiling on Plan expenditure is nearly unrealistic and it desires that the UGC should increase this ceiling so that development of infrastructure in the universities could be taken up with a view to improving the quality of our institutions of higher learning.

- The State Universities constitute a crucial segment within the higher education system in India, both in quantitative terms as well as in their contribution to the promotion of quality research and teaching. Today we have 217 State universities. The following measures are suggested: -

    - Colleges affiliated with state universities and located in backward regions of the country should be strengthened by UGC.

    - Assistance should be provided for setting up of B.Ed faculty in college/university at each district headquarter.

    - Grants should be provided for joint research programmes.

    - Broadband connectivity should be provided for all State Universities.

    - Measures are adopted to continue funding for new faculty posts for state universities beyond the plan period.

    - Quality growth in the affiliated colleges, which take the entire responsibility of conducting the undergraduate program of their respective universities, must be regarded as an integral component of the development program of the State universities.

- Since the development of State universities cannot take place without a concomitant development of its affiliated colleges, there is a need to embark on a new project to create and fund teaching posts and provide research grants to college teachers.

- The UGC's Inflibnet System needs to be expanded to cover all State universities. The same facilities should be made available to the affiliated colleges, especially those colleges that offer post-graduate courses.

- Planned efforts should be made to create facilities for teachers and research students of the State universities to enable them to become internationally more knowledgeable by way of providing opportunities to them to become more exposed to international collaborative programmes and identifying international partners in research.

- Additional financial support for these schemes should be forthcoming from the UGC to reduce the burden of tuition fees paid by students for such courses.

- Academic Staff Colleges in State universities need to be strengthened.

- Resources need to be earmarked for State universities for strengthening Distance/Open and e learning as an integrated activity within the university system.

3.4.5 Deemed To Be Universities

- Section 3 of the UGC Act provides that an institution of higher education, other than universities, can be declared as an institution deemed to be university. Such institutions enjoy the academic status and privileges of a university. Out of 103 Deemed to be Universities, only 9 are receiving 100% non-plan and plan grant through UGC, whereas 3 receive fixed non-plan grant, on year-to-year basis. In all, 25 Deemed to be Universities get plan grant from University Grants Commission. The Government has so far decided that no more institutions, except those set up by Government of India, will be provided the plan or non-plan grant by the UGC and hence, majority of the 'Deemed to be Universities' are working, in a way, as self-financing institutions. The recommended measures are: -

- Selected ‘Deemed to be Universities’ should be considered for being eligible to get some financial assistance under plan and non-plan schemes of UGC.

- Teachers should be eligible for individual grants under various schemes. The teachers of Deemed to be Universities should be provided an opportunity to attend Refresher & Orientation courses conducted by Academic Staff Colleges.

- UGC should evolve a differential mechanism by supporting those ‘Deemed to be Universities’ who are solely dedicated to access and equity, with a focus on marginalized groups.

- The ‘Deemed to be Universities’ should be eligible for UGC/AICTE funded scholarship/fellowship programs.

3.4.6 Autonomous Colleges

- India consists of a large network of more than 17,000 colleges. Out of them, there are 204 autonomous colleges spread over in 44 universities of 10 States and 1 Union Territory. These colleges form the bedrock of higher education. They are also the unit of higher education to promote access, equity, quality, relevance and research. The recommended measures are:-

    - Teachers of autonomous colleges should be treated on par with those in the Universities.

    - Special recognition should be accorded to meritorious autonomous colleges.

    - Autonomous college be granted degree awarding status.

    - Cluster colleges should be created. Clear and well-defined guidelines should be formulated for these to function.

    - The academic council of autonomous colleges must be empowered to start the undergraduate or postgraduate courses just like the ‘deemed to be universities’.

    - Networking of autonomous colleges be done in such way that the students benefit by credit transfer from one autonomous college to another autonomous college, for the purpose of conferment of the degree , so as to enable students’ mobility.

    - University Grants Commission should support creation of specialized schools in the campus.

- A permanent status of autonomy and degree awarding status is conferred to colleges, which have gone through the experience 15-20 years of autonomy.

- Special grant for CPE and Autonomous colleges to initiate the Deemed University status with the aid of and in consultation with the State Governments.

- Additional grant as second phase of CPE for existing CPE colleges, after assessing their utilization of the first CPE grant.

3.4.7 Community Colleges

- The community college is an alternative system of education, aimed at helping the poor- urban, rural and tribal - and women to find gainful employment in collaboration with the local industry and the community. The system is 'of' the community, 'for' the community and 'by' the community to produce responsible citizens. The community college promotes job-oriented, work related, skill-based and life-coping education. A community college is a comprehensive institution of higher education, offering educational programs at post-secondary school level, which includes courses in occupational and technical fields and continuing education, to meet the workforce needs of the region in which the college is located and also offering 'bridge' courses. The community college is the need of the hour. It provides education for a livelihood. It responds to the challenges of exclusion and elimination from the formal system, mismatch between education and employment capability, poverty, and problems of unemployment, under-employment, unemployability and school dropouts. The unique achievement of the community colleges has been the empowerment of the socially, economically and educationally backward sections of society in the last 10 years. The following measures are recommended.:-

  - National recognition for the community college system is required.

  - Vertical mobility of the community college students through the Open Universities and conventional Universities with the three tier system: Diploma, Associate degree and Degree.

  - Funds, Stipends and Scholarships should be provided to the disadvantaged sections of society especially SC/ST/BC/MBC/Women/Minorities.

  - Central Placement Cells should be set up in Collaboration with Confederation of Indian Industries and Chambers of Commerce.

- Community Colleges should be established in educationally backward districts with emphasis on soft skills development. Setting up the Community colleges can go a long way for correcting the regional imbalance in the system of Higher Education

- Institutions of repute can adopt neighboring villages and open Community Colleges to promote vocational/skills training and pre-college training/bridge courses.

CHAPTER – 4

PUBLIC EXPENDITURE ON HIGHER EDUCATION: AN OVERVIEW

4.1 Process and Nature of Planning for Higher Education

- The plan size is determined by the Planning Commission in consultation with the Ministry of Human Resource Development, UGC and other experts through the constitution of an expert group on higher education. The development grant is essentially in the nature of ad hoc grant provided once in five years by UGC to the Central Universities on the basis of negotiations. In allocating the plan grants to the universities, UGC has scheme-based approach to fund higher education. Plans prepared by the universities are scrutinized by the UGC and allocations to the universities are made under the different schemes.

  In the light of above observations, it would be profitable to explore the possibilities of alternative method of planning, considering one or more of the following issues and aspects: -

  - Scheme based approach of the plan support to universities and colleges should be restricted to the few major schemes only.
  - Universities and colleges should be allocated a block grant. The block grant can be disbursed against a 5 year perspective plan prepared by the universities and colleges under the guidelines issued by the UGC.
  - Perspective plan of the universities and colleges should clearly mention the vision, mission and objectives of the institution. The detailed plan should review the status of teaching and research and contribution of the institution in terms of access, equity and quality.
  - Guidelines of the UGC may provide for the norms and the financial support for the separate programme.
  - UGC should develop an effective online monitoring mechanism along with the review missions for supervision of implementation of the programmes.

4.2 Growth Pattern of Public Funding for Higher Education

- The trend of the public expenditure on higher education indicates that during 1993-94 and 2004-05, the public expenditure in elementary education has gone up by four times. However, the public expenditure on secondary and higher education has increased roughly by three times. The size of the total public expenditure in India in 2004-05 (B) is Rs. 80286 crores (Rs. 802.8 billion). The Sectoral allocation of public expenditure on education for all these years on elementary, secondary, higher (general) and technical education remained at roughly around 50, 30, 12 and 4 percentage points respectively.

TABLE-1

Sector wise Plan & Non Plan Budgeted Expenditure for Education Departments of State & Center (Revenue Account)

(Figure in Rs. Thousand Crore)

Year	Elementary	Secondary	Higher	Technical	Higher + Technical	Total
1993-94	10822	7759	3104	1018	4122	23413
1994-95	12639	9050	3525	1189	4714	27232
1995-96	15218	10344	3871	1290	5161	31517
1996-97	17850	11736	4288	1450	5738	36372
1997-98	20392	13262	4859	1623	6482	41109
1998-99	25150	16782	6117	2073	8190	51225
1999-00	27905	20845	8248	2459	10707	61281
2000-01	29758	19743	9195	2528	11723	62498
2001-02	32493	20431	8087	2560	10647	64847
2002-03	33474	22049	8859	2820	11679	68561
2003-04(R)	38260	23983	9380	3138	12518	76387
2004-05 (B)	40586	24990	9562	3387	12949	80286

Source: Analysis of Budgeted Expenditure on Education, MHRD, Govt. of India, Various Years.

4.3 Nominal and Real Public Expenditure per Student

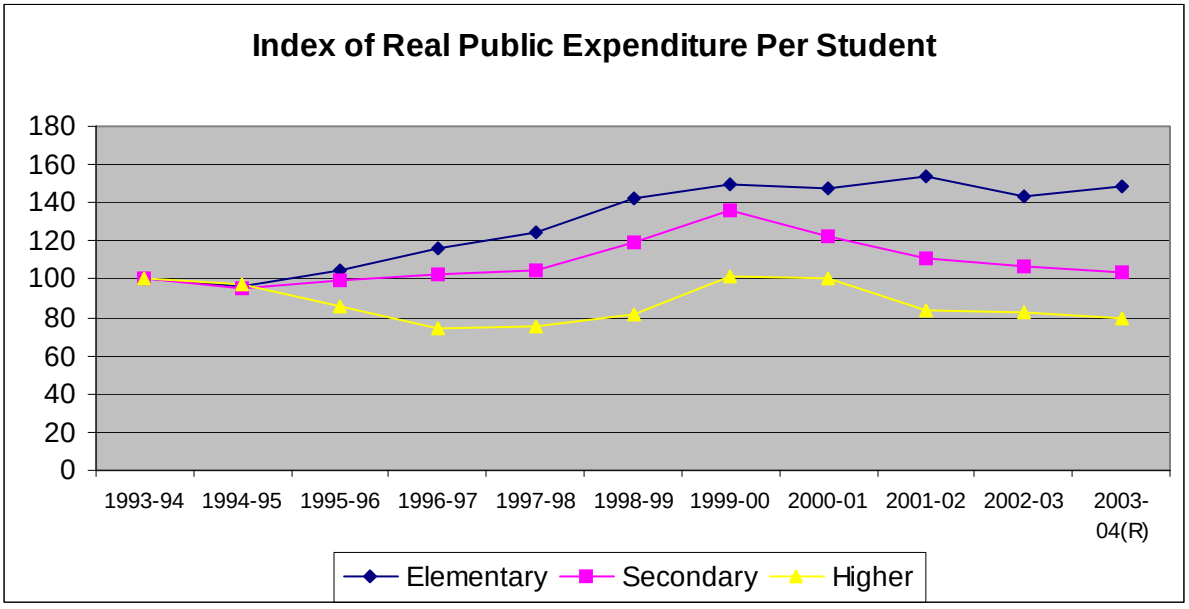
- The past trend of nominal and real public expenditure per student, however, tells us a completely differentiated and all together different picture of the role of government in financing education. In normal terms the public expenditure per student in elementary, secondary and higher education stands at Rs. 2162, Rs. 6852 and Rs. 12518 respectively in 2003-04. The trend analysis shows that the increase is not that marked if we consider the growth in enrolment. In fact the nominal public expenditure per student in higher education has gone up only by 40% during 1993-94 and 2003-04. In real terms, however, public expenditure per student in higher education has declined from Rs. 8961 in 1993-94 to Rs. 7117 in 2003-4. In elementary education the public expenditure per student has increased from Rs. 825 to Rs. 1229 only during the same period. In Secondary education public expenditure per student has remained almost static during above period at little below Rs. 4000.

TABLE-2
Public Expenditure per Student
Nominal and Real (Base year – 1993-94)

Rs.

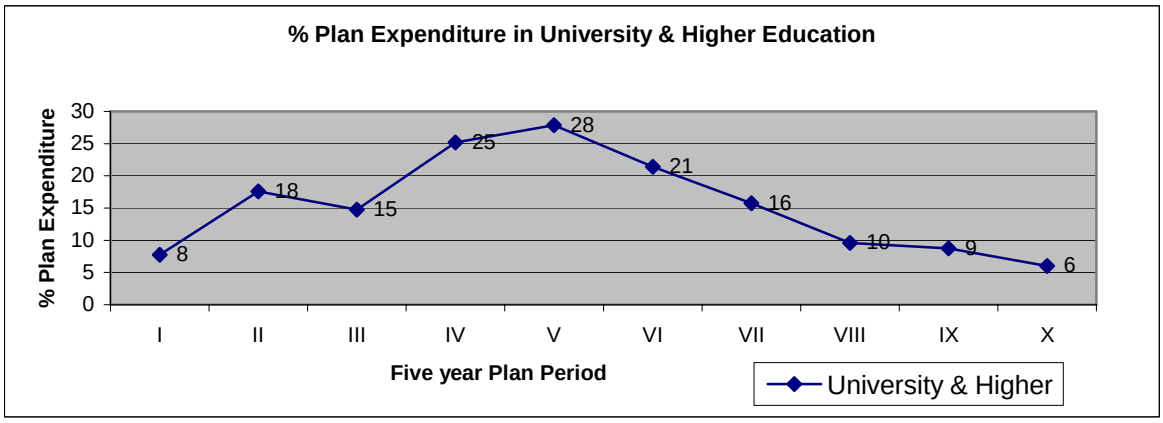
Year	Elementary		Secondary		Higher	
	Nominal	Real	Nominal	Real	Nominal	Real
1993-94	825	825	3748	3748	8961	8961
1994-95	893	793	4040	3588	9821	8722
1995-96	1052	865	4517	3715	9384	7717
1996-97	1220	959	4890	3844	8438	6634
1997-98	1361	1025	5221	3932	9003	6779
1998-99	1654	1175	6285	4467	10238	7276
1999-00	1792	1233	7392	5087	13219	9097
2000-01	1900	1220	7153	4594	13956	8963
2001-02	2047	1269	6699	4153	12099	7501
2002-03	1977	1185	6641	3982	12294	7370
2003-04®	2162	1229	6852	3896	12518	7117

In terms of index of real public expenditure per student, the decline in public expenditure in higher education is equal to 21 percentage during 1993-94 and 2003-04.



4.4 Trend Analysis of Plan Expenditure: An Overview

- Total Plan expenditure in university and higher education was highest at 28% in the fifth plan. It has been continuously falling thereafter, touching the lowest level in the X Plan.



Source: Annual Financial Statistics of Education Sector 2003-04, MHRD, Govt. of India, New Delhi, 2005.

- X plan allocation in elementary education constitutes 65.6% of total allocation for education. Central plan allocations for Secondary Education, University and Higher Education and Technical Education constitute around 10% each. If we take a relatively higher allocation in the last year of X plan and assume that it is realized, then the actual plan expenditure in X plan in elementary education will drastically increase to 78% of total plan expenditure in education, whereas the corresponding ratios for Secondary Education, University and Higher Education and Technical Education will come down radically to 6, 7 & 6 percentage points respectively. In absolute terms there is expected to be a decline in actual expenditure in Secondary and Technical Education in comparison to original allocation in X plan. Even in University and Higher Education there is a possibility of actual absolute decline in expenditure in relation to original X plan allocation if the inflated budgetary provision during 2006-07 remains unspent.

TABLE-3
Central Plan Allocation and Expenditure During X plan

(Rs. Crore)

Scheme	X plan Allocation	Percent To total	2002-3 (Actual)	2003-4 (Actual)	2004-5 (RE)	2005-6 (Revised)	2006-7 (B)	X Plan Expenditure	% To total	Difference (2-9)
1	2	3	4	5	6	7	8	9		10
Secondary	4325	9.87%	578.14	639.08	653.6	859.41	1067	3797.23	6	527.77
Univ.& Higher	4176.5	9.53%	619.14	560.44	789.95	873.27	1403.5	4246.3	7	-69.8
Language.	434	0.99%	103.57	104.11	114.77	105.5	165	592.95	1	-158.95
Scholarship	52	0.12%	0.24	0.16	1	8.37	13	22.77	0	29.23
Book Promotion	67	0.15%	6.26	6.53	5.2	14.09	27	59.08	0	7.92
Plan. & Admn.	70.5	0.16%	5.4	4.65	6.32	5.69	10.5	32.56	0	37.94

Tech. Edu.	4700	10.72%	600.47	626.34	653.31	643.67	930	3453.79	6	1246.21
Elementary	28750	65.60%	4259.29	5203.40	7750	12241.76	16892.5	46346.95	78	-17597
Adult	1250	2.85%	216.33	232.50	250	290	235.5	1224.33	2	25.67
Total	43825	100.00%	6388.84	7377.21	9570.84	15041.76	20744	59122.65	100	-15297.7

Source: Annual Financial Statistics of Education Sector 2003-04, MHRD, Govt. of India, New Delhi, 2005 and Expenditure Budget 2006-07, Volume – 2, Government of India, February, 2006.

- The significant point to note is that past trend of plan expenditure for university and higher education of the IX plan continues to prevail during the X plan. During XI plan there is a need to reverse the trend. Interventions made by UGC to achieve the goals of access, equity and quality can mark the impression only if UGC gets a substantial plan funding in higher education. The high absolute plan size of university and higher education during XI plan is of crucial importance.

4.5 Centrality of the UGC in the Plan Expenditure

- Of the total planned allocation of Rs. 4176.5 crores during X^{th} plan the UGC is the major recipient and spender of planned resources for university and higher education. Almost 79% of resources are allocated under UGC. Allocation for IGNOU constitutes 10% of plan allocation. Plan allocation for Institutions of Research is of the order of 5% and the National Programme for Women constitutes 6% of plan allocation. There is expected to be a serious shortfall in actual expenditure for IGNOU and the Institutions of Research. There is an expected shortfall of the order of 40% for IGNOU and 28% for Institutions of Research in plan expenditure. The total overall shortfall is likely to be of the order of Rs. 157 crores in university and higher education. It seems that National Program for Women could not take off during X plan period. UGC occupies a crucial role in planned expenditure of resources for higher education. Hence it is important to analyse the actual magnitude and directions of investment of planned resources by the University Grants Commission.

TABLE-4

Scheme wise Plan allocation and expenditure during X plan

Name of the Scheme	X plan 2002-07 allocation	% to Total	2002-03	2003-04	2004-05	2005-06 (R)	2006-07 (B)	Total	Diff.
National Programme for Women	254.50	6	0.00	0.00	0.01	-	-	0.01	-254.49
AIU	2.00	0	0.25	0.40	0.50	-	-	1.15	-0.85
Institution of Higher	5.00	0	0.83	0.70	0.33	-	-	1.86	-3.14

Learning									
Zakir Hussain Memorial College Trust	2.00	0	0.00	0.00	0.40	-	-	0.4	-1.6
UGC	3294.00	79	559.76	516.75	694.75	709.72	1139.47	3620.45	+326.45
IGNOU	430.00	10	31.99	16.56	67.00	54.00	90.00	259.55	-170.45
Institutions of Research	189.00	5	26.31	26	26.96	25.08	31.38	135.73	-53.27
Total	4176.50	100	619.14	560.44	789.95	788.8	1260.85	4019.18	-157.32

Source: Annual Financial Statistics of Education Sector 2003-04, MHRD, Govt. of India, New Delhi, 2005 and Expenditure Budget 2006-07, Volume – 2, Government of India, February, 2006.

4.6 Declining Public Expenditure in Higher Education

- Plan and non-plan budgetary support to university and other higher education on revenue account of the center and the states taken together during 2002-05 (1st three years of X plan period) is shown below to calculate the total public expenditure per student. The trend during the period shows that in nominal terms the total public expenditure per student in university and other higher education on revenue account is continuously falling and it is little over Rs. 10,000. In real terms it shows a consistent decline during 1990's and in the first half of the present decade. In fact index of real public expenditure in higher education has fallen to 79 points in 2003-04 as compared to 1993-94 as the base year.

TABLE-5
Total Public Expenditure per Student in Higher Education
2002-05

Year	Total Public Expenditure (Rs cr.) (Revenue Account)	Enrolment (Excluding Tech, Medical, Agricultural& Veterinary)	Public Expenditure per Student (Rs.)
2002-03	8859	8164945	10850
2003-04 (R)	9380	8849807	10599
2004-05(B)	9562	9318695	10261
2005-06 (R)			
2006-07(B)			

Source: UGC Annual Report 2002-03, 03–04, 04-05, University Grants Commission, New Delhi and Analysis of Budget Expenditure on Education, Ministry of Human Resource Development, Govt. of India of different years.

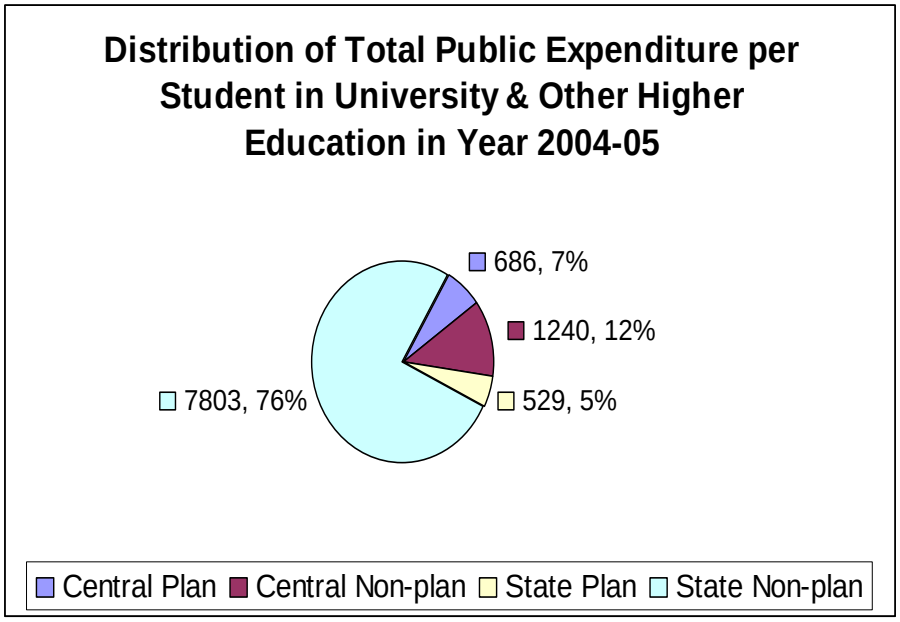
- Some more facts can be established by breaking the component of per capita public expenditure. It may be noted that on an average, during 2002-05, the central plan and non plan expenditure per student amounts

to only 6% and 12% respectively, whereas the state plan and non plan expenditure per student amounts to around 5% and 76% respectively. Thus total plan expenditure of centre and states constitutes only 11%. The bulk expenditure is on account of non-plan expenditure. It is also important to note that there has been a consistent decline in the planned resources per student for higher education.

TABLE-6

Distribution of Total Public Expenditure per Student in Higher Education

	Public Expenditure per Student		
	2002-03	**2003-04 (R)**	**2004-05 (B)**
Central Plan	758	639	686
Central Non-plan	1386	1336	1240
State Plan	527	558	529
State Non-plan	8176	8063	7803
Total	10847	10596	10258



An important point to observe is that States are severely constrained to add to the existing capacity to improve access and quality in terms of planned investment. Similarly, the states are facing resource constraints, and as a result, even non-plan commitment is difficult to fulfill. Its impact in terms of rising vacancy of teachers and poor maintenance of infrastructure, laboratory, library, equipment etc. are quite visible. It is in this context that the central plan, even though it constitutes small proportion to public expenditure in the X plan, has a

developmental role. A significantly high proportion of central plan contribution to the public expenditure per student for university and other higher education and Technical education is the most crucial aspect of the policy and planning. It acquires importance in terms of higher XI plan allocation for university and other higher education and technical education.

CHAPTER – 5
Financial Requirements for Higher Education in the Eleventh Plan, Based on Macro Targets and Estimates

5.1 Introduction

5.1.1 The higher education sector has witnessed a brisk rate of increase in the last few years. Available estimates show that the targeted enrolment rate (10 percent) for the Tenth Plan is likely to be exceeded by 2006-07.

5.1.2 The CABE Committee on Financing of Higher Education has concluded on the basis of international experience that an enrolment rate of 20 percent or more is consistent with a turnaround in economic performance. A number of alternative estimates also show that the higher education sector in the country would need to expand at a rapid rate in order to meet the needs of an economy, which is poised to grow at a rate of nine percent or more. This has also been stressed by the Approach Paper in the Eleventh Plan.

5.1.3 However, the higher education sector currently faces major challenges of quality and excellence, and of improving access with inclusiveness. The quality of education in the sector is uneven with large segments, both in the government-financed and private unaided sector, showing very poor standards. In the public-funded sector, these problems are largely related to the number and quality of teachers and availability of infrastructure. Secondly, the sector is ill equipped to face the challenge of inclusion due to a number of reasons. There are large disparities in enrolment rates across states, urban and rural areas, sex, caste and poor-non-poor. Apart from changes in the policy framework, this itself demands higher investment in the field of higher education in backward and rural areas, along with promotion of schemes that can help inclusion and simultaneously expand enrolment.

5.1.4 Both the public as well as the private sector will have to take requisite steps to meet the above challenges. The CABE Committee on Financing of Higher Education has shown that the relative share of public expenditure on higher education has declined sharply over the Plan periods. It has also shown that in the recent years, there has also been a decline in per student real expenditure on higher education. The Common Minimum Programme of the government has laid down the goal of six percent of GDP for the education sector as a whole by the end of the 11th Plan. The Committee on Reaching National Common Minimum Programme's Commitment of Six Per Cent of GDP to Education, under the Chairmanship of Prof. Tapas Majumdar, has outlined various scenario under which this goal could be reached, and has set a target of 1 percent of GDP for higher education. Compared to this, the current expenditure is

only about 0.4 percent. The Approach Paper to the Eleventh Plan has proposed raising this expenditure by about 0.25 percent or to about 0.65 percent but this suggested increase is not based on rigorous quantitative targets and estimates.

5.1.5 Enrolment Targets

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that our aim should be increase the access ratio to at least 20% by 2015, which could be the threshold limit for our remaining in global race as also for sustainable development of the Country.

The Tenth Plan had projected an increase of enrolment rate in higher education from 6 per cent to 10 per cent over the Plan period i.e. an increase of 4 percent. The Ministry has considered various options and proposes an increase of 5 percent in the gross enrolment rate over the 11th Plan period. The Approach Paper to the Eleventh Plan has proposed that the gross enrolment rate be raised by 5 percent as quickly as possible. This would amount to a very substantial increase in enrolment – by about 84 lakh students over a period of five years.

5.1.6 Current Enrolment Scenario. There are large variations in the estimates of enrolment according to various sources of data, leading to various base level scenarios. At present, the Ministry of Human Resource Development compiles detailed enrolment data, by types of courses, based on data provided by states and councils of education. These are published annually in the Selected Educational Statistics (SES). This is the most comprehensive annual source for data on enrolment in higher education.

5.1.7 The National Sample Survey directly canvasses a schedule on educational participation in decennial rounds (42nd and 52nd). The survey also collects detailed participation data in the Employment-Unemployment Rounds (38th, 43rd, 50th, and 55th). The 60th Round of the NSS, which is a half year round (January-June 2004) also provides participation data for 2003-04. But the round does not provide detailed break-up by broad discipline and type of education, as is possible with the main rounds. While the NSS provides very rich information on education participation – of the kind not available elsewhere, one problem with the survey is that, since it is a sample-based survey, total (projected) estimates of enrolment

from the various rounds for specific year vary, depending on the specific rounds that are used for the projections.

5.1.8 The Population Census provides limited break-up of types of education, but its strength lies in that it is enumeration based. The Census provides data on total enrolment in higher education. For 2001, this figure is available separately for college education and vocational education. The later includes degree, diploma and certificate education which is in the higher education segment , as also vocational/certificate courses. However, the later form a small part of total enrolment in higher education.

5.1.9 A projection of the growth rate of enrolment in the 1991 and 2001 Census provides an estimate of total enrolment in higher education of 2.07 crores or a GER of 15.6 percent. With the proposed 11th Plan target, the total enrolment is estimated to increase to 2.97 crores (increase of 90.7 lakhs) and the GER to 20.6 percent in the terminal year of the Eleventh Plan. The Census estimates may be treated as upper bound estimates, covering both the formal and informal, public and private systems, as also recognized diploma and certificate education.

5.1.10 The actual estimated enrolments and GERs for three years (1999-00, 2000-01 and 2003-04) from the SES, NSSO (Rounds 55 and 60) and Census are compared in Tables A1, B1 and C1.

5.1.11 Share of major streams in Higher Education. The various enrolment estimates provide some break-up of enrolment by streams. Almost all the estimates show that the technical/professional stream in education has grown at a much faster rate in recent years – varying from 1.5 times (SES) to nearly double (NSS). This is also consistent with the changing demand of the economy. Hence, the composition of enrolment is likely to change over the 11th Plan period. Estimates that have been prepared reflect this change. Thus, the share of technical and professional education is expected to change from 25 to 30 percent over the 11th Plan period in the formal sector alone. Since technical education is separately provided for in the budgets, the estimates of financial requirements here are projected only for general education.

5.1.12 Private Education in Higher Education. Private (unaided) education has also grown at a rapid rate in the last several years. However, no firm estimates are available of the share of private education in total enrolments. The only source of such information is the NSS 52nd Round, which gives estimates for 1995-96. According to estimates

generated from household data of this NSS Round, 8 percent of enrolment in the higher education sector was in private unaided institutions. The share of private education was higher in technical and professional education (20 percent in engineering, 10 percent in medicine). Enrolment on private unaided education is projected to increase to 16 percent of total enrolment by 2006-07 and 20 percent of total enrolment by 2011-12. The share of private education in technical education is however projected to touch 40 percent by 2006-07 and 60 percent by the end of the 11th Plan. However, the share of private unaided education in the enrolment figures reported in the SES is likely to be very small and can also be ignored in estimating the financial requirements based on SES estimates. These estimates are given in Table 7.A1, whereas in Table 8.B1, it has been assumed that SES estimates also cover half of estimated private enrolment.

5.2 Financial Requirements for Higher Education

As discussed above, although the SES underestimates enrolment in higher education, it fairly represents the higher education sector.

5.2.1 Recurrent expenditure per student. In order to estimate the requirement of recurrent expenditure per student in general higher education, two estimates, both conservatively defined, have been prepared.

5.2.2 **Norm based requirements.** There are various criteria for norm-based estimates to find out the per student recurrent expenditure requirement in higher education. The per student recurrent expenditure requirement works out to be Rs 26,250. The relevant comparisons and adjustments are shown in Annexure Table 1.

5.2.3 Requirements on the basis of revised historical trends. Per capita student expenditure on plan and non-plan heads has been calculated for each year from 1993-94 to 2003-04 (latest year for which data is available) and have been converted to 2006-07 prices. For the last year, prices have been adjusted by 5.5 percent. For all the earlier years, the GDP deflator has been used. It is seen that the per student expenditure on higher education has declined in recent years. At 2006-07 prices, the per student expenditure was about Rs. 17,000 in 1993-94 whereas it was only Rs. 13000 in 2003-04. There is clearly an urgent need to take corrective measures to arrest the decline in real per student expenditures that have contributed to deterioration in quality, as well as to increase expenditure to bring about some further improvement. Moreover, any improvement in quality and access (to improve inclusiveness) over and above the existing level will require higher level of revenue expenditure. A 50 percent mark-up over the 1993-94 expenditure levels would raise the expenditure to Rs. 25,400, which is quite close to the norm-based estimate. A lower mark-up of 25 percent over the 1993-94 level (giving an estimate of Rs 21,200 per student) would be feasible in the next five years.

5.2.4 Thus, in the medium term, public expenditure should be expected to support a minimum normative level of recurrent expenditure. A lower per student expenditure of Rs 21,200 in the Eleventh Plan period has been worked out.

5.2.5 The calculations are based on the premise that while the ongoing expenditure level of Rs. 13000 will continue for all students, the additional amount (Rs.13250 in the case of norm based revision and Rs 7200 in the case of simple mark-up) will be available to about one-fifth of the enrolled students each year over the Plan period in the form of increased support to educational activities.

5.2.6 Estimate of Non-recurrent (one time) expenditure requirements.

Estimates of non-recurrent expenditure requirements are difficult to quantify, but from the estimates prepared by the Central Universities Group for OBC reservations and the estimates prepared for Delhi University colleges, the figures have been suitably adjusted. As compared to the Group's estimated requirement of Rs 4 lakh per student, a low requirement of Rs 40000 per student on account of non-recurring expenditure has been estimated.

5.2.7 It may be mentioned that the per student expenditure for Central Universities finally recommended by the Oversight Committee for Social Inclusion are 1.62 lakhs (non-recurring) and 1.21 lakhs,(recurring, per year). These are lower than the Group's estimates, but are still much higher than the Working Group's estimates. The rationale for taking such low requirements as a basis here is that most of the additional enrolment is likely to be in colleges at undergraduate level, which would need good but relatively unsophisticated expenditure. The expenditure requirement is, however, admittedly on the lower side for enrolments which will take place in post-graduate university campuses.

5.2.8 This non-recurring expenditure has been estimated only for additional enrolments. In the calculations, it has been assumed that the total non-recurring expenditure will spread over five years in the following ratios: 10%, 15%, 25%, 25% and 25%.

5.2.9 Trend levels of existing Plan and Non-Plan expenditure. At present, budgetary expenditures by states and centre on general higher education (education budget) are available up to 2003-04. Trend estimates of expenditure for the 11th Plan period have been estimated at 2006-07 prices and have been used to estimate the additional requirements.

5.2.10 Estimates of Total Financial Requirements. Since enrolment data vary across sources, three different scenarios have been used to

estimate financial requirements: (i) SES enrolment data for General and B. Ed. Education, assuming no enrolment in private unaided institutions is included in these estimates (Tables 7.A); (ii) SES enrolment data as before, but including a component of private enrolment (Tables 8.B); (iii) Census based enrolment estimates, with private enrolment share increasing as discussed above (Tables 9.C). Similarly, two different recurring cost scenarios (norm based – Rs 26250 per student and mark-up based – Rs 21.200 per student) have been considered. **The estimates proposed for the 11th Plan are based on official enrolment data (SES) assuming that the data coverage is only for government financed institutions.**

5.2.11 Total Financial Requirements using norm based recurring expenditure estimates. The estimates, based on norm-based requirements for recurring costs are presented in **Tables 7.A4-5, 8.B4-5 and 9.C4-5.** These show that the total additional outlay required for achieving the enrolment targets will increase from about Rs 6014 crores to Rs. 28,359 crores over the Plan period. **As a percentage of GDP, the total outlay on higher education will increase from 0.95% to 1.14 %.** The financial requirements based on SES enrolment data but with some share attributed to private education is quite similar. The financial requirements with Census based enrolments are higher (0.95 percent of GDP in the first year and 1.53 percent of GDP in the fifth year).

5.2.12 Total Financial Requirements using mark-up based recurring expenditure estimates. The estimates, based on a mark-up over existing recurring costs are presented in **Tables 7.A2-3, 8.B2-3 and 9.C2-3**. These show that the total additional outlay required for achieving the enrolment targets will increase from about Rs 4585 crores to Rs. 16,500 crores over the Plan period. The total additional outlay which will be required over the 11th Plan period will be Rs 54,222 crores. **As a percentage of GDP, the total outlay on higher education will increase from 0.62% to 0.85 %. The additional outlay required will increase from 0.16 percent in the first year of the Plan to 0.42 percent in the final year.** The financial requirements based on SES enrolment data but with some share attributed to private education is quite similar. Census based enrolments, being higher, lend themselves to higher financial requirements (0.88 percent of GDP in the first year and 1.14 percent of GDP in the second year).

5.2.13 Discussion of the Results. The Approach Paper to the Eleventh Plan has suggested that it would be desirable to increase the enrolment rate in higher education by about 5 percent in the Eleventh Plan period. **This should be considered as the targeted increase in GER over the plan.** Given the current trends and requirements, it may be assumed that technical and professional education, and the private sector in higher education will

expand a high rate in the Plan period. Allowing for this, It has been estimated the required increase in general education enrolments. Financing requirements have been estimated on the bases of two different per student recurring cost requirements. **The likely costs to meet this requirement could be about Rs. 3260 crores or only about 0.2 percent of the Plan.** The norm based estimate shows that the cost of higher education will exceed 1 % of GDP in the final year. However, if the existing per student expenditures are only increased marginally, the percentage of GDP devoted to higher education will increase to only 0.86 percent (including the expenditure on Central universities under the Oversight Committee's recommendations).

5.2.14 It may be noted that the Committee chaired by Prof. Tapas Mazumdar has recommended a target of 1 percent of GDP, consistent with the CMP's commitment of reaching the target of spending 6 percent on education. This is not recommended as a ceiling, since it is conceded that education should require higher financial support. On the other hand, the Approach Paper has recommended an expenditure increase by 0.25 percent of GDP. This would imply a total expenditure by the Centre of 0.31 to 0.33 percent of GDP (excluding technical education). As per the Working Group's calculations, the norm based expenditure would require an additional outlay of 0.72 percent with norm based expenditures and 0.42 percent with mark-up based expenditures. **Given the current fiscal scenario, it is proposed that the Center's commitment to the sector be kept at 0.42 percent of GDP (as projected in the mark-up based scenario).** At the same time, it has to be recognized, that there has been considerable neglect of the sector by the State governments as a whole. Efforts have to be made to increase state spending on higher education so that the states may be able to contribute to bridge the gap between the two estimates (norm based and mark-up based). At the same time, it may also be possible for the States (as well as the private aided institutions) to share the increased outlay that is being proposed.

TABLE-7: Estimates Based on Enrolment Data of SES (without private enrolment)

7.A1: Estimate of Enrolment (Enrolment in 000)

Year	Academic Year	Pop 18-23	Total Higher Education	Total GER	Addl. Total Enrolment	Share of Tech in Total Enr (%)	Tot Tech & Prof Ed	Tot Gen	Addl General Enrolment
	Base Year								
2006	2006-07	132243	13934	10.5		0.25	3535	10399	
	11 th Plan								
2007	2007-08	135440	15034	11.1	1100	0.26	3909	11125	726
2008	2008-09	138318	16460	11.9	1426	0.27	4444	12016	891
2009	2009-10	141257	18222	12.9	1762	0.28	5102	13120	1104
2010	2010-11	144259	20341	14.1	2118	0.29	5899	14442	1322
2011	2011-12	144287	22365	15.5	2024	0.30	6709	15655	1213
					8431				5256

7.A2.. **Financial Requirement based on SES Enrolment with pvt education and Recurring Costs based on Mark-up (Rs. crores)**

Base Year		Recur Exp @ existing exp level	Recur Cost on Base Enr	Recur Cost Addl Enr	Total Recurring	Total Non-Recurring	Total recur+Non-recur
2006-07	10399						
11 th Plan							
2007-08	726	1352	164	96	1612	218	1829
2008-09	891	1352	328	213	1893	326	2219
2009-10	1104	1352	492	359	2203	544	2747
2010-11	1322	1352	655	534	2541	544	3085
2011-12	1213	1352	819	694	2865	544	3409
	5256	6759	2458	1896	11113	2102	13216

Note: Cost per student is Rs 21200 (recurring) and 40000(non-recurring)

7.A3. Additional Financial Requirement based on SES Enrolment without pvt education and Mark-up based Recurring Costs (Rs. crores)

11 th Plan	Tot est. exp.	Total trend based State exp + Central Non-Plan	GDP Factor Cost	Addl outlay (1) - (3)	(1) as % of (4)
	(1)	(3)	(4)	(5)	(7)
2007-08	18292	13707	2958686	4585	0.62
2008-09	22194	14588	3195381	7606	0.69
2009-10	27466	15526	3451012	11941	0.80
2010-11	30850	16525	3727093	14325	0.83
2011-12	34090	17588	4025260	16502	0.85
	132155	77933	0	54222	

7.A4. Financial Requirement based on SES Enrolment without pvt education and Norm-based Recurring Costs (Rs. crores)

Base Year		Recur Exp @ existing exp level	Recur Cost on Base Enr	Recur Cost Addl Enr	Total Recurring	Total Non-Recurring	Total recur+Non-recur
2006-07	10399						
11 th Plan							
2007-08	726	1352	265	191	1807	218	2025
2008-09	891	1352	530	424	2306	326	2632
2009-10	1104	1352	794	714	2860	544	3404
2010-11	1322	1352	1059	1061	3472	544	4016
2011-12	1213	1352	1324	1380	4055	544	4599
	5256	6759	3972	3770	14501	2102	16604

7.A5. Additional Financial Requirement based on SES Enrolment without pvt education and Norm based Recurring Costs (Rs. crores)

11 th Plan	Tot est. exp.	Total trend based State exp + Central Non-Plan	GDP Factor Cost	Addl outlay (1) - (3)	(1) as % of (4)
	(1)	(3)	(4)	(5)	(7)
2007-08	19721	13707	2958686	6014	0.67
2008-09	25860	14588	3195381	11272	0.81
2009-10	33666	15526	3451012	18141	0.98
2010-11	39912	16525	3727093	23387	1.07
2011-12	45948	17588	4025260	28359	1.14
	165106	77933	0	87173	

TABLE 8: Estimates Based on Enrolment Data of SES (with private enrolment)

8.B1: Estimate of Enrolment (Enrolment in 000)

Year	Academic Year	Pop 18-23	Total Higher Education	Total GER	Addl. Total Enrol-ment	Share of Tech in Total Enr (%)	Tot Tech & Prof Ed	Share of Pvt enr in Tech & Prof.	Tot Gen	Share of Pvt enrol-ment in Total Edu	Pvt enrol-ment in Genl Educa-tion	Publicly funded General Educa-tion	Addl Publicly funded General Enrolment
	Base Year												
2006	2006-07	132243	13934	10.5		0.25	3535	0.2	10399	0.08	408	9991	
	11 th Plan												
2007	2007-08	135440	15034	11.1	1100	0.26	3909	0.22	11125	0.084	403	10722	731
2008	2008-09	138318	16460	11.9	1426	0.27	4444	0.24	12016	0.088	382	11634	912
2009	2009-10	141257	18222	12.9	1762	0.28	5102	0.26	13120	0.092	350	12770	1136

2010	2010-11	144259	20341	14.1	2118	0.29	5899	0.28	14442	0.096	301	14141	1371
2011	2011-12	144287	22365	15.5	2024	0.30	6709	0.3	15655	0.1	224	15432	1291
					8431								5440

8.B2.. **Financial Requirement based on SES Enrolment with pvt education and Recurring Cost based on Mark-up (Rs. crores)**

Base Year		Recur Exp @ existing exp level	Recur Cost on Base Enr	Recur Cost Addl Enr	Total Recurring	Total Non-Recurring	Total recur+Non-recur
2006-07	9991						
11 th Plan							
2007-08	731	1299	164	96	1559	218	1777
2008-09	912	1299	328	217	1843	326	2170
2009-10	1136	1299	492	367	2157	544	2701
2010-11	1371	1299	655	548	2502	544	3046
2011-12	1291	1299	724	718	2741	544	3285
	5440	6494	2363	1946	10803	2176	12979

Note: (1) Existing Revenue Exp (at 2006-07) prices) Rs. 13,000 per student.
(2) Targeted Revenue exp. per student is Rs 21200 (recurring) and 40000(non-recurring)

8.B3. Additional Financial Requirement based on SES Enrolment with pvt education and Mark-up based Recurring Costs (Rs. crores)

1. Financial Requirements based on SES based Enrolment Estimates with pvt education

11 th Plan	Tot est. exp.	Total trend based State exp + Central Non-Plan	GDP Factor Cost	Addl outlay (1) - (3)	(1) as % of (4)
	(1)	(3)	(4)	(5)	(7)
2007-08	17768	13707	2958686	4061	0.60
2008-09	21698	14588	3195381	7110	0.68
2009-10	27012	15526	3451012	11487	0.78
2010-11	30460	16525	3727093	13936	0.82
2011-12	32854	17588	4025260	15265	0.82
	129792	77933	0	51859	

8.B4. **Financial Requirement based on SES Enrolment with pvt education and Norm-based Recurring Costs (Rs. crores)**

Base Year		Recur Exp @ existing exp. level	Recur Cost on Base Enr	Recur Cost Addl Enr	Total Recurring	Total Non-Recurring	Total recur+Non-recur
2006-07	9991						
11 th							

Plan							
2007-08	731	1299	264	192	1754	218	1972
2008-09	912	1299	530	431	2260	326	2586
2009-10	1136	1299	794	729	2823	544	3367
2010-11	1371	1299	1059	1089	3447	544	3991

8.B5. Additional Financial Requirement based on SES Enrolment with pvt education and Norm- based Recurring Costs (Rs. crores)

11 th Plan	Tot est. exp.	Total trend based State exp + Central Non-Plan	GDP Factor Cost	Addl outlay (1) - (3)	(1) as % of (4)
	(1)	(3)	(4)	(5)	(7)
2007-08	20248	13707	2958686	6541	0.68
2008-09	26322	14588	3195381	11734	0.82
2009-10	34045	15526	3451012	18519	0.99
2010-11	40162	16525	3727093	23637	1.08
2011-12	45995	17588	4025260	28406	1.14
	166035	77933	0	88102	

TABLE-9.C: Estimates Based on Census

C1: Estimate of Enrolment (Enrolment in 000)

Year	Academic Year	Pop 18-23	Total Higher Educa-tion	Total GER	Addl. Total Enrol-ment	Share of Tech in Total Enr (%)	Tot Tech & Prof Ed	Share of Pvt enr in Tech & Prof.	Tot Gen	Share Of Pvt enrol-ment in Total Edu	Pvt enrol-ment in Genl Educa-tion	Publi-cly funde d Gener al Educa -tion	Addl Public ly funde d Gener al Enrol-ment
	Base Year												
2006	2006-07	132243	20666	15.6		0.16	2131	0.4	18534	0.16	2454	16081	
	11 th Plan												
2007	2007-08	135440	22212	16.4	1546	0.168	3732	0.44	18480	0.168	2090	16391	310
2008	2008-09	138318	23929	17.3	1717	0.176	4212	0.48	19718	0.176	2190	17528	1137
2009	2009-10	141257	25850	18.3	1921	0.184	4756	0.52	21094	0.184	2283	18811	1283
2010	2010-11	144259	27986	19.4	2136	0.192	5373	0.56	22613	0.192	2364	20249	1438
2011	2011-12	144287	29723	20.6	1737	0.2	5945	0.6	23779	0.2	2378	21401	1152

9.C2.. **Financial Requirement based on Census Enrolment with pvt education and Recurring Costs based on Mark-up (Rs. crores)**

Base Year		Recur Cost on Base Enr	Addl Cost	Recur Cost Addl Enr	Total Recurring	Total Non-Recurring	**Total recur+Non-recur**
2006-07	16081						
11 th Plan							
2007-08	310	2091	264	41	2395	213	2608
2008-09	1137	2091	527	191	2809	319	3128
2009-10	1283	2091	791	360	3242	532	3774
2010-11	1438	2091	1055	550	3696	532	4228
2011-12	1152	2091	1319	702	4111	532	4643
	5320	10453	3956	1845	16253	2128	18381

Note: Cost per student is Rs 21,200 (recurring) and 40000(non-recurring)

9.C3. Additional Financial Requirement based on Census Enrolment with pvt education and Mark-up based Recurring Costs (Rs. crores)

11 th Plan	Tot est. exp.	Total trend based State exp + Central Non-Plan	GDP Factor Cost	Addl outlay (1) - (3)	(1) as % of (4)
	(1)	(3)	(4)	(5)	(7)
2007-08	26080	13707	2958686	12373	0.88
2008-09	31281	14588	3195381	16694	0.98
2009-10	37740	15526	3451012	22215	1.09
2010-11	42276	16525	3727093	25751	1.13
2011-12	46434	17588	4025260	28845	1.15
	183811	77933		105878	

9.C4. Financial Requirement based on SES Enrolment with pvt education and Norm-based Recurring Costs (Rs. crores)

Base Year		Recur Cost on Base Enr	Addl Cost	Recur Cost Addl Enr	Total Recurring	Total Non-Recurring	**Total recur+Non-recur**
2006-07	16081						
11 th Plan							
2007-08	310	2091	426	81	2598	213	2811
2008-09	1137	2091	852	380	3323	319	3642
2009-10	1283	2091	1278	717	4086	532	4618
2010-11	1438	2091	1705	1094	4889	532	5421
2011-12	1152	2091	2131	1396	5618	532	6150
	5320	10453	6392	3668	20513	2128	22641

Note: Cost per student is Rs 26250 (recurring) and 40000(non-recurring)

9.C5. Additional Financial Requirement based on Census Enrolment with pvt education and Norm-based Recurring Costs (Rs. crores)

11 th Plan	Tot est. exp.	Total trend based State exp + Central Non-Plan	GDP Factor Cost	Addl outlay (1) - (3)	(1) as % of (4)
	(1)	(3)	(4)	(5)	(7)
2007-08	28108	13707	2958686	14401	0.95
2008-09	36418	14588	3195381	21830	1.14
2009-10	46175	15526	3451012	30649	1.34
2010-11	54211	16525	3727093	37687	1.45
2011-12	61497	17588	4025260	43909	1.53
	226410	77933		148476	

Chapter – 6
Status of Higher Education Institutional Capacity

6.1 Progress of Higher Education Institutional Capacity

The institutional capacity is assessed in terms of number of universities and colleges, teachers and number of students.

In 1947 there were only 20 Universities in the country and this increased to 357 in 2006 denoting a 18-fold increase. During the 10th plan period, 2 central universities, 39 state universities, 50 deemed universities and 10 private universities have been added (Table 2.1). Number of State universities have grown at the rate of 22% and the deemed universities at the rate of 100%. *The expansion of deemed and private universities is an important feature of the 10th plan.*

Table 10

Growth of Universities in 10th Plan (4 years only)

S. No.	Category	As on 31.3. 2002	As on 31.3. 2006	Universities funded by UGC	Directly by Central Govt.
1	Central	18	20	18	2
2	State	178	217	158	-
3	Deemed	52	104	25	-
4.	Institutions (Est. by State Legislative Act)	05	05	03	-
5	Institutions of National Importance (Est. by Central Legislation	12	13	-	13
6	Private University	-	8	1	
7	Total	265	367	205	15

Source: UGC

6.2 Universities by Types of Disciplines

Distribution of central and state universities into major disciplines show that out of 237 universities, 123 universities are in general disciplines, although some of them may have affiliating technical and professional colleges as well. There are

35 agricultural universities followed by 14 technological, 11 language, 11 open, 9 medical, 6 law, 3 women, 4 animal & fishery universities. It shows the university system has diversified into many disciplines – a trend that needs to be encouraged (table 2).

Table 11

Distribution of Central and State Universities into types of Discipline

Type	Number	%
General	126	54
Agricultural	35	15
Technological	14	6
Language	11	5
Medical	9	4
Law	6	2.6
Woman	5	1
Animal & Fishery	4	1.7
Open	11	5
Others	16	5.7
Total	237	100

Source: UGC Annual Report, 2004-05

Among the deemed universities, there is greater diversification. Apart from majority being in technological discipline, there are universities in specific research areas such as English and foreign language, yoga, brain research, dairy research, mines, basic science, neuro science, physical education, fisheries, economics and politics, development research, armament technology, population science, social science, IT, management, education, home sciences, rural studies, music, veterinary research, forest research, drama, planning and architecture, foreign trade, educational planning and administration.

6.3 State Wise Distribution of Central and State Universities

Among the major states Uttar Pradesh (24) has highest number of universities, followed by Maharashtra (20), Tamilnadu (17), Andhra Pradesh (16), West Bengal (16), , Karnataka (15), Madhya Pradesh (14), Gujarat (13), Bihar (12) and Rajasthan (12), Orissa (9), Punjab, Uttaranchal, Assam, Delhi and Chhattisgarh (5 each) and Jharkhand and Himanchal (4 each). The central universities are concentrated in Andhra Pradesh, West Bengal, UP, Delhi and North eastern states.

6.4 Number and Distribution of Colleges

Table 3 shows the growth of colleges during 10^{th} plan. There were 15,437 colleges in 2002 and this increased to 17,625 in 2005 and 18064 in March 2006.

Of these, about 14000 colleges (79 %) mostly in Arts, Science and Commerce streams are under the purview of the UGC. However, only 40 % of these colleges which came under the purview of UGC are included under Section 2(f) and 12B of the UGC Act and are entitled for grant. 92 % of the colleges included under Section 12 B of the UGC Act received grant support under X plan. It is also important to note that only 2,879 colleges have so far been accredited by NAAC. Of these, 647 are Government, 2051 government aided and 181 private colleges.

Table 12
Number of Colleges in 2002 & 2006

S.No.	Category	As on January 1, 2002	As on March 31, 2005	% of previous row	March 31, 2006	% of previous row
1	Total	15,437	17,625		18,064	
2	Under UGC purview (Arts, Science & Commerce)	11,128	14,000	79.4	14400	79.72
3	Included u/s 2(f) UGC Act		5,589	39.9	6109	42.42
4.	Included u/s 12(B) UGC Act		5,273	94.4	5525	90.44
5	Funded by UGC X^{th} plan		4,870	92.4	5068	91.73
6	Accredited by NAAC		2,780	37.1		

Source: UGC

It may be noted that a vast majority of the colleges (60%) are not recognised by UGC under section 2(f) of UGC Act. This poses a great challenge for the UGC in respect of maintenance of standard of teaching and examination in higher education.

6.5 Distribution of colleges in different states

In terms of distribution, there are some distinguishing features in the distribution of colleges in different states. There is a north-south imbalance in the number of colleges. Southern states such as Maharashtra, Andhra Pradesh and Karnataka have 2441, 2096 and 1865 colleges respectively. Three states alone account for 36% of the colleges. Some major northern states such as Assam, Bihar, Uttaranchal, West Bengal, Jharkhand lag behind other states in the number of colleges.

The distribution in the number of colleges per lakh population as per census 2001 among different states is given in Table 4. It reveals that Bihar, J&K, Punjab, Rajasthan, Tamilnadu, Tripura, UP, West Bengal, Sikkim and Delhi are lagging behind in terms of number of colleges per one lakh population, as the above states have less than 5 colleges per one lakh population.

Table 13
State wise distribution in the number of colleges per lakh population

Less than 5	5-10	10-20	20 and above
Punjab (2.3), Sikkim (2.5), Bihar (3.6), J & K (3.3), Rajasthan (4), Tamilnadu (4.8), Tripura (3.4), UP (4), West Bengal (3.6) Delhi (3.5)	Andhra Pradesh (7.7), Arunachal Pradesh (6.1), Assam (8.5), Chhattisgarh (8.7), Gujarat (6.6), Haryana (6.05), Himachal Pradesh (9.3), Jharkhand (5.5), Kerala (6), Madhya Pradesh (9.9) Maharashtra (9.7), Uttranchal (8.9)	Goa (12.8), Karnataka (12.53), Meghalaya (16.5), Nagaland (12.5), Orissa (12.1)	Manipur (21.5), Mizoram (23)

During 10th plan, States such as Bihar, Jharkhand, Harayana, Himachal Pradesh, Uttaranchal and West Bengal have added 13, 1, 6, 16, 30 and 35 colleges respectively in the first three years of 10th plan. The growth of colleges in these States is far from satisfactory. There are also inter district variations within each and every State in terms of number of colleges per one lakh population.

6.6 Teachers

The total number of teachers in 2004-05 was 4.72 lakhs and 4.88 lakhs in March, 2006. Out of the total teaching faculty, 83.85% (409154) were employed in affiliated colleges and only 16.15% (78819) in the universities. The student-teacher ratio works out to 22. The student–teacher ratio is 18 in the university departments and colleges and 23 in the affiliated colleges. The average enrolment per college is 594. (See Table 14).

Table 14

Number of Teachers in Institutions of Higher Education, 2004-05

Institution	Enrolment (in '000)	Teachers (in '000s)	Student teacher ratio	Students per Institute
University Departments & University Colleges	13,88	77	18	
Affiliated Colleges	90,93	3,95	23	
Total	104,81	4,72	22	594

Source: UGC Annual Report, 2004-05

The situation with respect to student teacher ratio as indicated by NAAC shows an uneven distribution among high and low-grade colleges. For example student-teacher ratio in a grade colleges is 20.4, whereas it is as high as 28.5 in all C grade colleges. The student-teacher ratio by permanent teachers is 29.8 in A grade colleges. It goes upto 38 in B grade colleges. It clearly suggests that there is shortage of permanent teachers in even high-grade colleges. The availability of highly qualified teachers is the most important index of quality. There is a need to reverse this situation by recruiting permanent teachers in the colleges.

Table 15
Distribution of student teacher ratio in the NAAC accredited colleges

	NAAC Grades					
Indicators	A & Above	B++ & B+	B only	C++,C+ & C	Non-Accredited	Total
No. of Sample Colleges	110	547	298	233	285	1473
STR (Student Teacher ratio)	20.4	31.8	28.6	28.5	25.2	25.0
STR by Permanent teachers	29.8	31.8	38.1	35.8	35.6	33.5

Source: Analysis of Self Assessment Report of NAAC Accredited Colleges by UGC (unpublished).

6.7 Growth in Student Enrollment

Growth of higher education in India can be looked at both from supply as well as the demand side. In terms of the supply side what needs to be ascertained is that all those who have passed senior secondary level and are eligible and willing to join higher education must have an access to the institutions of higher education. Secondly, the growth of higher education, both in terms of number and diversification, must meet the growing manpower needs of the economy and society. This means that higher education supply side has backward linkages with school education and forward linkages with economy in terms of supplying skilled manpower to the economy including the well qualified teachers to the education sector itself.

There are three different sources of enrollment/attendance in higher education institutions.

(a) Selected Educational Statistics, MHRD, Government of India – It provides annual enrollment of students by levels (Doctorate, Postgraduate, Graduate, Diploma/Certificate), stream wise enrollment (Arts, Science, Commerce, Engineering and Technology, Medicine, Teacher Education and Others) in colleges and universities and enrollment in diploma/certificate courses in Polytechnics, Teacher Training Schools and institutions such as arts and crafts including industrial trade for boys and girls. It also reports enrollment in distance education in IGNOU and 13 state open universities.

(b) Population Census – It provides decennial information on persons of specific age attending college education (UG and PG) in universities or private institutions (recognized or unrecognised) and vocational education. Vocational education includes degree, diploma and certificate in technical/professional courses. Census definition of higher education is very wide and embraces all types of education – public, private, distance, certificate, diploma and degree.

(c) National Sample Survey (NSS) - It provides data on educational attainment and enrolment in its different years – 1983, 1987-88, 1993-94, 1999-2000 and 2003-04.

6.8 Enrolment by Levels and Major Disciplines (SES)

Table 2.7 sums up the enrolment by levels of education as mentioned in Selected Educational Statistics. The total enrolment in higher education is 10 million in 2003-04. The total enrolment in doctorate and postgraduate level is 65525 and 806636 respectively. It shows a rather low research base in relation to the total enrolment in higher education. Technical education has grown at 12.7% as compared to 2.6% for general graduate education during the period 2000-01 to 2003-04. Enrolled technical graduates are 11.1 lakhs as opposed to 80.1 lakh general in 2003-4. Added to this is 11.9 lakhs students enrolled in courses.

Table – 16

Enrolment by Levels and Major Disciplines

Year	Ph.D	PG	General Graduate (Art, Science & Commerce)	Technical Graduate (Engg., Medical, B Ed)	Total Higher Education (Degree (2+3+4+5)	Diploma	Total Higher Education (Degree, Diploma) (6+7)
1	2	3	4	5	6	7	8
1980-81	25417	291341	1886428	239267	2442453	430126	2872579

1990-91	32468	354216	3285776	416828	4089288	796686	4885974
2000-01	45004	647338	7244915	688625	8625882	987279	9613161
2001-02	53119	647016	7139497	790050	8629682	1104594	9734276
2002-03	65357	782590	7633125	1035701	9516773	1199785	10716558
2003-04	65525	806636	8026147	1110840	10009148	1191447	11200595

Source: Selected Educational Statistics, Different years

Table 2.8 sums up different percentages that present a glimpse of growth in different disciplines as well as the levels of higher education. The graduate enrolment as a proportion to total enrolment is increasing, the postgraduate enrolment as a proportion to total enrolment is decreasing in the past 25 years. The proportion of doctorate to postgraduate enrolment is almost constant at 8%. Science and technology graduate as a proportion to total graduate has declined from 32% in 1980 to 29% in 2003. Recent years have also shown a decline in the number of science graduates in relation to technical graduates. Still, the ratio of technical to total graduate is low at 8%. It is important to note that the demand for teachers is high, yet the proportion of B. Ed enrolment to total general graduate is declining and is currently at 2%. The fall in vocational enrolment to total higher education enrolment is yet another area of concern for higher educational planners.

Table – 17
Enrollment Ratios by Levels and Major Disciplines (%)

	Graduate/Total	**PG/ Total**	**PhD/ PG**	**Science Graduate (BSE+BE+MBBS)/Total Graduate**	**B.Sc./ Total Science Graduate**	**Technical Graduate/ Total Graduate**	**BEd/ (BA+B.Sc.+ B.Com)**	**Diploma Vocational/Total Higher**
1980	87	13	8	32	75	8	4	18
1985	89	11	8	29	74	7	3	15
1990	91	9	8	29	70	9	3	19
1995	91	9	8	28	70	8	3	15
2000	92	8	7	25	71	7	2	11
2001	90	10	8	27	68	9	2	13
2002	91	9	8	28	63	11	2	13

2003	91	9	8	29	62	11	2	12

Note: Above percentages are calculated from the figures in SES, MHRD, Government of India

6.9 Issues relating to Access

Universities

6.9.1 During the 10th plan, there has been a rapid growth, almost doubling of deemed universities, which reflects the pressing demand for more institutions. But new state universities have not increased by same rate due to resource crunch. In this context of growing demand, state universities need to be supported in the 11th plan in diversified disciplines. Also, there is significant inter state imbalances in the location of Central Universities. So, in the XI , at least one central university should be set up in each state and at least one state university in each state should be funded through UGC at a level of Central University.

6.9.2 The state universities have grown, over the years, across specific disciplines such as agriculture, language, technology, medical, law, animal husbandry and fishery. However, the diversification of deemed universities across specific subject areas is taking place at a much faster rate. This diversification among states as well as deemed universities needs to be further promoted. The private institutes and colleges that have achieved excellence may be granted deemed university status after careful scrutiny of proposals. During the 11th plan, an appropriate balance in the number of state supported universities and privately managed deemed universities should be maintained. Selected Deemed Universities should be provided grants for infrastructure development.

6.9.3 Another important issue is the development of universities and colleges in backward and Minority concentrated regions of the state.

6.10 Colleges

6.10.1 It is a matter of concern that only 40% of the total number of colleges for general education is covered under Section 2(f) and 12 B of the UGC Act. UGC has
the responsibility to maintain standards of higher education. Hence maximum number of colleges needs to be brought under the purview of UGC.

6.10.2 There is an indication of decline in the growth of government and aided colleges under general education, given the resource constraint of the state

governments. The decline in growth of government and aided colleges needs to be arrested to increase access of students in general education.

6.10.3 An inter state and inter district imbalance in the number of colleges needs to be reduced to the minimum. There is a need to focus on some of the states/regions that lag behind other states in the number of colleges per lakh population.

6.11 Teachers

The most important issue relating to teacher in higher education in recent years relates to the shortage of well-qualified permanent teachers. Resource constraint has forced the state governments not to fill up the position of vacant posts. This has resulted in the rise of low paid temporary teachers. Another issue relates to the qualification and training of teachers. The research facilities and the travel support to the teachers to attend conferences are important dimensions to develop their capacity as a good teacher. It needs to be recognised that, the education is too important a sector to be neglected due to limitation of resources..

6.12 Enrolment

6.12.1 In terms of access with respect to levels of education, the expansion of research base needs to be ensured. The enrolment levels of doctorates and postgraduates need to be raised in the universities. At the same time the undergraduate base of higher education in terms of its depth (higher enrolment) and width (diversified courses) too needs to be raised. Therefore greater support to existing colleges will be required.

6.12.2 In terms of access with respect to disciplines, it is necessary to increase the base of science education in percentage terms. The B.Ed. enrolment needs to be increased to meet the demand of secondary education teachers. The demand for high quality professionals is growing and increasing number of institutions to cater to the needs of high demand needs to be established by the government.

CHAPTER – 7
PROGRESS IN ENROLMENT LEVEL – AGGREGATE LEVEL

In the preceding section, it has been observed that there has been a many fold increase in the education institution capacity in terms of institutions and teachers. This is reflected in increase in the number of students. This increase in institutional capacity should reflect increase in the higher preparation of youth in age group of 18-23 availing the higher education after completing higher secondary stage. In this respect, the enrolment rate is the main indicator of the progress in higher education.

The GER is the ratio of number of students enrolled (irrespective of age) divided by number of persons in the age group of 18 - 23. The NER is the age specific enrolment rate measured as the ratio of persons in the age group 18 - 23 enrolled in higher education vis-à-vis the population in the same age group. The EER is the ratio of total eligible persons (UG/PG/Diploma) in the age group of 18 - 23 to the number of persons in the same age group having completed higher secondary or equivalent education.

7.1 The GER - Profile

The Education Commission, of 1964-65 provides estimate of enrolment ratio based on Selected Education Statistics for early 1950. In 1950-51 the enrolment rate was 0.7%, which increased to 1.4% in 1960-61. For the recent years 2003, the Gross Enrolment Ratio (GER) works out to 9%.

7.2 Census provides information on the attendance of higher education in colleges and vocational education. Census results (2001) show that on a wider definition of higher education (degree, diploma and certificate in post senior secondary stage) the GER in higher education has gone up to a level of 13.82% in 2001(Table – 19).

7.3 As per the NSSO figures, the total enrolment in higher education in 2003-04 is 161.1 lakhs, giving GER of 13.22%. NSS results show the enrolment in technical education has shot up in the 1990's. Aggregate enrolment in higher education given in NSS is closer to the census result.

7.4 Comparative Scenario: The results of GER from different countries show that developing countries in South East Asia have attained much higher GER. Developed countries have GER invariably above 50%. The world average of GER is 23.2%. India, therefore, cannot afford to remain in the low range of GER.

Table 18
Enrolment in Higher Education by Regions – 2001-02

Groups of Countries	GER
Countries in Transition	36.5
Developed Countries	54.6

Developing Countries	11.3
World	23.2
India (Tentative)	About 10%

Source: Higher education in the world 2006, the financing of University, 2006, Palgrave Macmillan.

Table 19
Enrolment Ratio By alternative sources

Years	**Total Higher Education**		
Sources	**SES**	**NSS**	**Census**
1983	4.04	7.67	na
1987-88	4.69	8.57	na
1991	4.63	Na	10.95
1993-94	4.80	8.85	11.74*
1999-00	7.22	10.08	13.19*
2001	7.85	10.00	13.82
2003-04	9.01	13.22	14.48*

Source: SES - UGC

Table 20

The Comparative Profile: GER/NER/EER as per NSS for the Year 2003 for Population Group (18 - 23 Years)

GER	13.2
NER	13.2
EER	59.0

Source: Computed from 'Employment and Unemployment Survey, 1999-2000, NSSO, GOI.

Chapter – 8

EQUITY AND INCLUSIVE EDUCATION – ENROLMENT AT DISAGGREGATE LEVEL

8.1 Enrolment at disaggregate level

After having assessed the progress at aggregate level in the last chapter, attempt has been made to look at the progress with respect to certain special groups and also at the inter-group disparities of multiple natures. The present chapter devotes on a study of the disparities between (a)rural and urban (b) States (c) Inter-caste (d) Inter-religion (e) Male-female (f) different occupation groups; and (g) Poor and non–poor. NSS data for 2000, which provide detailed information at disaggregate level, has been used..

8.2 Rural and Urban

There are significant disparities in enrolment ratio between rural and urban area. In 2000 the GER for rural and urban area was 5.58% and 21.74% respectively- GER in urban area being four times higher compared with rural area (Table 4.10).

The population census came up with the GER of 8.99% for rural area and 24.52% for urban area in 2001 - the GER in rural area being all most three time lower compared with urban area.

The EER worked out to 51.1% for rural and 66% for urban area-later being higher by about 15% points. This means only half of the rural boys and girls who complete higher secondary go to higher education which is less by 15% points compared with urban area.

8.3 Inter-State Variation

There are considerable inter-state variations in the level of higher education. While the GER at aggregate level is about 10.08%, it is more than national average in State/UTs like Chandigarh (26.24%), Delhi (21.16%), Kerala (18.08%), Goa (17.54%), Pondicherry.(15.37%), Himachal Pradesh (15.22%) and Maharashtra (14.14%) (Table 4.1(b).

By national comparison, the GER is lower than the national average in States/UTs like Lakshadweep (0.34%), D&N Haveli (2.23%), Arunachal Pradesh (2.42%), Sikkim (5.01%), Tripura (5.97%), Bihar (6.16%), West Bengal (6.30%), Meghalaya (07.13%), Mizoram (7.87), Karnataka (7.96%).

8.4 Gender Disparities

The access to higher education is also low for girls as compared with boys. The GER being 12.12% for male and 8% for female.

Table 21

Access to Higher Education By Caste Group - 2000

Socio-Religious Group	Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 1999-00					
	Total					
	Total Graduates			Total Higher		
	Male	Female	Total	Male	Female	Total
ST	6.04	5.07	5.55	7.19	5.71	6.43
SC	5.08	2.62	3.88	6.63	3.48	5.09
OBC	7.06	3.92	5.53	8.99	4.91	7.00
General	14.22	11.09	12.71	19.20	14.11	16.74
Total	**9.21**	**6.34**	**7.81**	**12.12**	**8.00**	**10.10**
Rural						
ST	4.93	4.39	4.65	5.74	4.53	5.11
SC	3.85	1.27	2.57	5.07	1.70	3.40
OBC	4.62	1.82	3.24	5.88	2.27	4.10
General	8.82	5.01	6.93	11.79	6.19	9.01
Total	**5.79**	**2.97**	**4.39**	**7.53**	**3.61**	**5.58**
Urban						
ST	13.68	10.22	11.97	17.08	14.56	15.83
SC	9.48	8.16	8.87	12.19	10.75	11.53
OBC	14.01	10.34	12.26	17.82	12.96	15.51
General	22.44	21.65	22.07	30.50	27.87	29.28
Total	**17.53**	**15.55**	**16.60**	**23.28**	**19.99**	**21.74**

Table 22

Access to Higher Education - Statewise - 2000 - Total

Gross Enrollment Ratio* (GER %) in Age Group 18-23 yrs: 1999-00**						
STATES	Total Graduates			Total Higher Education***		
	Male	Female	Total	Male	Female	Total
Andhra Pradesh	9.03	5.57	7.25	12.16	7.29	9.66
Arunachal Pradesh	3.98	0.41	2.22	4.29	0.51	2.42
Assam	9.37	7.11	8.28	10.81	7.88	9.40
Bihar	6.92	2.84	4.91	8.79	3.47	6.16
Goa	7.55	11.57	9.71	18.69	16.55	17.54
Gujarat	8.78	7.43	8.11	11.22	8.80	10.01
Haryana	8.55	6.81	7.73	11.14	8.69	9.99
Himachal Pradesh	11.78	11.41	11.58	16.85	13.84	15.22
Jammu & Kashmir	9.44	6.83	8.17	11.19	8.30	9.78
Karnataka	6.68	3.94	5.31	10.06	5.86	7.96
Kerala	12.46	15.54	14.05	15.56	20.43	18.08
Madhya Pradesh	9.28	8.94	9.12	11.00	9.91	10.48
Maharashtra	11.13	8.08	9.70	16.81	11.10	14.14
Manipur	11.00	9.06	10.05	14.59	12.53	13.58
Meghalaya	6.62	5.40	5.99	7.22	7.05	7.13
Mizoram	8.39	2.98	5.61	10.23	5.63	7.87
Nagaland	13.28	13.44	13.35	13.93	14.15	14.04
Orissa	9.20	4.29	6.71	11.55	4.94	8.21
Punjab	8.01	7.25	7.65	10.14	11.64	10.86
Rajasthan	8.93	5.62	7.36	10.99	6.48	8.85
Sikkim	4.98	1.31	3.25	7.39	2.36	5.01
Tamil Nadu	11.83	7.30	9.45	15.23	9.19	12.05
Tripura	7.16	3.08	5.24	7.85	3.84	5.97
Uttar Pradesh	9.83	5.10	7.58	12.60	6.29	9.59
West Bengal	6.45	2.97	4.68	8.69	3.98	6.30
A&N Island	4.28	10.43	7.56	4.33	11.04	7.91
Chandigarh	17.96	23.90	20.18	23.26	31.23	26.24
D&N Haveli	4.49		2.08	4.82		2.23
Daman & Diu						
Delhi	13.74	20.27	16.38	19.73	23.26	21.16
Lakshadweep	0.00	0.57	0.34	0.00	0.57	0.34
Pondicherry	15.67	7.90	11.81	18.81	11.90	15.37
India	***9.22***	***6.30***	***7.79***	***12.13***	***7.94***	***10.08***

Note: *GER= Total grads and diploma enrolled / population in 18-23 age group

****These include only those enrolled who have attained higher secondary and above education.**

***** Degree +Diploma**

Table 23

Economic Status and Net and Gross Enrolment Ratios: All India GER and Estimated Number of Enrolled Persons by Social Groups (1999-2000, Sector)

Gross Enrollment Ratio			
Poor			
Social Group	**Rural**	**Urban**	**Total**
ST	1.11	4.78	1.55
SC	1.35	3.86	1.89
OBC	1.13	5.16	2.30
OTHERS	1.66	7.00	3.58
All	1.30	5.51	2.43
Non Poor			
ST	7.81	23.19	9.70
SC	4.38	15.71	6.68
OBC	5.10	19.98	8.69
OTHERS	10.74	34.01	19.73
All	7.12	27.15	12.81
Entire Population			
ST	5.12	15.87	6.43
SC	3.38	11.55	5.08
OBC	4.10	15.53	7.00
OTHERS	9.00	29.28	16.74
All	5.58	21.75	10.10

Source: Special tabulation by the authors using

Note: Gross Enrollment Ratios have been calculated 18-23 year olds who have completed higher secondary.

Table 24
GER for 18-23 age Group by Household Type in Rural and Urban Sectors (1999-2000)

HH Type	ST	SC	OBC	OTH	All
	Rural				
Self Employed in Non Agriculture	2.53	3.77	3.97	7.73	5.17
Agricultural Labour	0.67	1.63	1.16	1.93	1.41
Other Labour	0.91	1.52	4.26	4.02	2.99
Self Employed in Agriculture	3.04	3.95	4.21	8.33	5.64
Others	35.39	14.15	11.54	22.08	18.55
All	5.12	3.38	4.10	9.00	5.58
	Urban				
HH Type	ST	SC	OBC	OTH	All
Self Employed	6.15	7.37	10.05	22.09	15.74
Regular wage and Salary	27.33	18.04	22.19	33.72	28.10
Casual Labour	1.53	2.61	3.34	4.30	3.26
Others	40.38	29.52	41.57	59.60	50.15
All	15.87	11.55	15.53	29.28	21.75

Table 25 `
GER for 18-23 age Group by Household Type in Rural and Urban Sectors for the Poor households (1999-2000)

HH Type	ST	SC	OBC	OTH	All
	Rural				
Self Employed in Non Agriculture	2.38	0.02	1.08	1.64	1.43
Agricultural Labour	0.91	0.01	0.47	0.93	0.86
Other Labour	0.00	0.00	0.52	1.08	0.37
Self Employed in Agriculture	1.31	0.02	1.56	2.11	1.78
Others	2.06	0.02	3.46	3.27	2.98
All	1.11	0.01	1.13	1.66	1.30
	Urban				
HH Type	ST	SC	OBC	OTH	All
Self Employed	2.45	3.75	4.46	5.35	4.59
Regular wage and Salary	14.38	5.57	7.83	10.17	8.60
Casual Labour	1.93	2.61	2.70	1.80	2.38
Others	14.23	8.46	10.54	20.15	14.39
All	4.78	3.86	5.16	7.00	5.51

Table 26
GER for 18-23 age Group by Household Type in Rural and Urban Sectors for the Non-poor households (1999-2000)

HH Type	ST	SC	OBC	OTH	All
	Rural				
Self Employed in Non Agriculture	2.61	4.47	4.95	9.31	6.34
Agricultural Labour	0.41	1.96	1.54	2.56	1.77
Other Labour	1.39	2.14	5.37	4.86	3.90
Self Employed in Agriculture	4.06	4.63	4.94	9.36	6.68
Others	42.21	17.10	12.96	24.24	21.09
All	7.81	4.38	5.10	10.74	7.12
	Urban				
HH Type	ST	SC	OBC	OTH	All
Self Employed	9.25	9.58	12.69	26.19	19.82
Regular wage and Salary	30.21	21.54	26.13	36.99	31.91
Casual Labour	0.66	2.61	3.92	6.43	4.17
Others	47.40	34.03	49.83	64.59	56.63
All	23.19	15.71	19.98	34.01	27.15

Table 27
GER for 18-23 age Group for Rural Households by Cultivated Land-holding size and Social Group (1999-2000)

Social Group	Landless	Less than 1 hectares	1-2.5 hectares	2.5-5 hectares	more than 5 hectares	Total
	Enrolment Total Rural					
ST	11.46	2.70	2.78	2.35	6.78	5.12
SC	2.96	4.17	1.95	4.37	6.81	3.38
OBC	4.15	3.80	4.32	4.42	5.50	4.10
OTH	8.85	8.45	9.91	9.97	8.65	9.00
All	**5.59**	**5.13**	**5.79**	**6.69**	**7.34**	**5.58**
	Enrolment Rural Poor					
ST	1.38	0.93	1.45	0.08	0.00	1.11
SC	1.05	1.64	0.70	8.43	0.00	1.35
OBC	0.73	1.18	1.72	0.71	4.07	1.13
OTH	0.85	1.54	2.59	4.83	6.51	1.66
All	**0.94**	**1.33**	**1.67**	**2.41**	**4.30**	**1.30**
	Enrolment Rural non-poor					
ST	17.30	4.16	3.61	3.54	8.35	7.81
SC	3.89	5.61	2.46	3.55	6.96	4.38

OBC	5.39	4.89	4.96	5.04	5.69	5.10
OTH	11.44	10.54	11.01	10.49	8.76	10.74
All	**7.47**	**6.81**	**6.88**	**7.39**	**7.61**	**7.12**

Chapter – 9
STATUS OF QUALITY AND EXCELLENCE

9.1 Introduction

Quality in Higher education has assumed great significance in recent times, particularly in the context of massification and increase in competition due to role of the market forces in higher education. Increasing cross-border education opportunities, technological development resulting in new modes of educational provisions and emergence of 'Knowledge society' are other challenging demands. In view of the rapid advancement of knowledge and rapid growth of complexity of technological endeavor, the future will need greater competencies and as a consequence, higher education must provide improved and speedy methods to meet today's needs and face tomorrow's challenges. While the expansion of the system of higher education has been impressive, the problem of access with equity, quality, and that of resource continue to burden the system as a whole, without finding suitable strategies to address them adequately. The principal postulate is that the quality assurance in higher education during the XIth plan period will be enabled primarily when human capital is creatively and imaginatively harnessed, developed and released compared to the 'linear' development strategies. Therefore it would be necessary to approach the matter in two dimensions.

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that India despite severe limitations has created a large scientific/technical manpower, which has earned a pride of place in the world community. India has not only to sustain its position but also to be a front-runner in the global competition. This can be done, according to the Committee, only when the standard and quality of our educational institutions and its graduates are greatly improved. They will have to be instilled with a high level of creativity, innovation, dedication, patriotism, etc. Greater and regular sharing of experiences through networking and otherwise between different institutions at the national and global plane is highly recommended. Multi-disciplinary curriculum with stress on developing problem-solving abilities, augmenting knowledge skill and group activities are essential to provide relevance and usefulness to real life situations. Quality of higher education can be greatly enhanced through the use of audio-visual techniques and the modern information & communication technologies.

9.2 Approach to Quality Enhancement – A Review

Since India attained independence in 1947, concerted efforts are being made in the country for the improvement of quality in higher education. Various measures have been outlined in policy documents of the government. The responsibility of assuring quality is basically that of the University Grants Commission (UGC) and the different statutory bodies dealing with professional education. The University Grants Commission Act, 1956, empowers the UGC to take "all such steps as it may think fit for promotion and coordination of university education and for determination and maintenance of standards in teaching, examination and research in the universities". In keeping with this objective, the UGC has in the past taken a number of initiatives and has launched a number of schemes. A brief description of these are given below:

9.2.1 It has formulated and issued, from time to time, guidelines and regulations related to:

- Minimum infrastructure facilities to be fulfilled before a university is declared fit for central assistance.
- Minimum infrastructure facilities to be fulfilled before the grant of affiliation to a college by a university.
- Essential qualifications for the appointment of Lecturers, Readers and Professors.
- Workload of teachers, duration of courses, and minimum number of teaching days for first-degree program.
- Schedule of academic events.
- Evaluation and assessment of performance of teachers.

9.2.2 In order to bring about a qualitative improvement in teaching at the undergraduate level, the UGC introduced, in 1974-75, the college Science Improvement Programme (COSIP) and the College Humanities and Social Science Improvement Programme (COHSSIP) under which the colleges were given special grants for the development of infrastructure.

9.2.3 A scheme of autonomous colleges was introduced under which selected colleges, that have a reputation for academic excellence have been granted freedom to develop their courses and syllabi, and the evolve methods of evaluation and conduct of examination.

9.2.4 In the late 1980s, the UGC established Curriculum Development Centres in 28 subjects and these prepared model curricula in their respective subjects. These were recommended to the universities for adoption. A second cycle of the development of model curricula was completed in 2001 and it is now more or less mandatory for the university to adopt

these curricula with small modification as may be necessitated by local needs.

9.2.5 The central role played by teachers in the promotion of quality teaching and learning has since long been accepted in India. There is a crucial link between motivation of teachers and the quality of education. It is therefore, proposed, among other things, to organize (i) specially designed orientation programmes in teaching methodologies, pedagogy, educational technology etc., for all new entrants at all levels, (ii) refresher courses for serving-teachers to cover every teacher at least once every five years. The UGC Committee Report on the revision of pay scales of teachers of universities and colleges also stressed the need for providing opportunities for professional development. Accepting these recommendations the University Grants Commission established 48 Academic Staff Colleges in different universities throughout the country at the beginning of the Seventh Five –year Plan period (1985-1990), and most of them in 1987 (the number is now 51). These have been assigned the responsibility of organizing orientation courses and refresher courses of a minimum of three weeks duration. The UGC also awards major and minor research projects to teachers to encourage them for research.

9.2.6 In order to promote excellence in research, the UGC has devised a Special Assistance Programme under which selected departments in the faculties of science, humanities, social sciences, and engineering and technology are given support at three levels. These are Departmental Research Support (DRS) that can be successively upgraded to give the departments the status of Departments of Special Assistance (DSA) and finally Centre of Advanced Studies (CAS).

9.2.7 A recently introduced scheme is to give a few chosen departments (the Departments for Potential of Excellence) very substantial financial support. The UGC also assists departments in the procurement of sophisticated and

costly equipment under a scheme formulated by the Committee for strengthening of Infrastructure in Science and Technology (COSIST). Financial assistance is also available for departments in the universities from the Department of Science and Technology, Government of India, from a 'Fund for Improvement of Science and technology Infrastructure in Higher Educational Institutions (FIST)'.

9.2.8 The UGC has established six autonomous Inter-University Centres for providing common facilities, services and programs in frontier areas. The centres are the Nuclear Science Centres, New Delhi; Inter-University Centre for Astronomy and Astrophysics, Pune; Inter-University Consortium for Department of Atomic Energy Facilities, Indore; Consortium for Educational Communication, New Delhi; Information and Library Network Centre (INFLIBNET), Ahmedabad and the Inter-University Centre for

International Studies, Hyderabad, In addition, the UGC has set up national facilities in different universities. These include the Western Regional Instrumentation Centre at University of Mumbai, Mumbai; the Regional Instrumentation Centre at India Institute of Science, Bangalore; the Crystal Growth Centre at Anna University, Chennai; the M.S.T. Radar Centre at Sri Venkateswara University, Tirupati; the Inter-University Centre for Humanities and Social Sciences at Indian Institute of Advanced Study, Shimla.

9.2.9 Two important quality monitoring agencies established in 1994 are the National Assessment and Accreditation Council (NAAC) under the University Grants Commission and the National Board of Accreditation (NBA) under the All India Council for Technical Education. While NAAC does institutional assessment of generally the conventional universities and colleges, NBA undertakes program assessment in professional institutions.

9.2.10 To achieve excellence in teaching and research activities, the UGC introduced a scheme, namely "University with Potential for Excellence" (UPE) during IX Plan. In the **first phase** during IX Plan, five universities viz. Jawaharlal Nehru University New Delhi, University of Hyderabad, University of Madras, Jadavpur University and University of Pune were identified in 2000 for granting the status of Universities with Potential for Excellence (UPE). Each university has been allocated an amount of Rs.30 Crores during the Plan period. During **Phase–II**, 12 more universities were recommended by the Standing Committee on UPE. However, the Commission while approving the selection of these 12 universities decided that a one time grant be given to these 12 universities and these may be called as "**Centre with Potential for Excellence**" in a particular area. During **X Plan** it was envisaged to select five more universities. After due process of selection, only four universities have been selected during X Plan and one slot is lying vacant.

9.2.11 During the **X Plan** the scheme of "College with Potential for Excellence" (CPE) has been launched and it was envisaged to identify at least 161 colleges, which have potential for excellence throughout the country during the Plan. These CPE colleges are expected to improve their academic infrastructure, adopt innovations in teaching, modern methods of learning and evaluation and also introduce a flexible approach in the selection of courses at the degree level. Such colleges would act as a role model for other colleges in their area of operation. The colleges would also be given joint "degree conferring status" with their names on the degree certificate. Such a sense of responsibility would enhance their credibility and induce them to improve the quality of teaching. They would also be encouraged to initiate research activity, which would give a positive feedback to their teaching programmes. During **phase–II**, (2005–2006), 50 colleges have been selected. A quota has been fixed for each State under the scheme.

9.3 Objectives of 11th Five year Plan

The initiatives and schemes described above, are all important and have their impacts on the higher education system. It is, however, being greatly realised that such sporadic schemes would not lead to quality movement in a country of our size and complexity. The country cannot go on creating islands of excellence in the ocean of mediocrity.

It must be realized that the youth of this country and parents thereof are not only seeking equitable access to higher education but also are in search of equitable access to quality higher education. The needs and expectations of masses can be met only by making concerted initiative to improve quality of higher education across all institutions of higher education in the country. The objective of the XI Five-Year Plan should, thus, be to bring about an across-the-board improvement in the quality of education provided by universities and colleges.

The above will require identification of (a) the critical factors and determinants of quality in higher education; (b) gaps in quality (c) the number of institutions i.e. the colleges and higher education that would require financial support for improving quality; and (d) the financial implications of the quality and excellence drive targeted at all institutions of higher education.

9.4 Extending the UGC Coverage to the Left Out Institutions:

There are a large number of institutions that are technically under the purview of the UGC but are not provided financial support by it because they fail to fulfill the minimum eligibility norms. Most of the minimum eligibility norms, it may be noted, are prescribed in terms of physical facilities, infrastructure and human resources. These institutions typically symbolise the chicken and egg story and are trapped in the vicious cycle of deprivation. They do not get access to UGC development assistance simply because they are poor enough and are not able to meet the minimum investment norms. Even a cursory look on the prevailing practice is sufficient to indicate the gravity of the situation. There are 14,000 colleges in the country under the purview of the UGC. Of these only 5,273 colleges are presently eligible to receive development grants, thereby leaving as many as 9,130 colleges without any development assistance [Table 28].

Table 28
Current Quality Status in Colleges of Higher Education in India
(As on March 31, 2005)

Details	Number
Total Number of Colleges	17,625
Number of Colleges under UGC purview	14,000
Number of Colleges recognised under Section 2(f) of UGC Act	5,589 (40%)
Number of Colleges recognised under Section 12(B) of UGC Act	5,273 (38%)
Number of Colleges actually funded by the UGC	4,870 (35%)
Number of Colleges accredited by the NAAC	2,780 (20%)
Number of Colleges accredited by the NAAC and scoring above 60%	2,506 (17.9)

The situation in case of the universities is no different than the colleges. Out of 317 university level institutions that are under the purview of the UGC, only 164 are provided with development assistance under plan and have access to other financial supports from the UGC. This leaves 153 universities without developmental support. Of these, 45 are those deemed universities that have been recognised as eligible to receive UGC grant under Section 12 B while 108 are the universities that have been established by different states.

Table 29
Current Quality Status of Universities in India (As in 2007)

Details	Total Number
Total Number of University Level Institutions	367
Total Number of Universities under UGC Purview	317
Number of Universities actually funded by the UGC	164
Number of Universities accredited by the NAAC	128
Number of Universities accredited by the NAAC and scoring above 60%	128

It is important to understand that most of these colleges are left out of the UGC purview simply because they fail to meet the minimum prescribed requirements of physical and human infrastructure. At the same time, it is also a harsh reality that given the average enrolment size of 500 per colleges, these left out colleges must be catering to the needs of approximately 30 to 40 Lakh students in the country. What is even more painful is the fact that most of these colleges are located in rural and distant areas catering to the needs of the most deprived and under-privileged sections of the society. At the national level, efforts should, therefore, focus on strengthening these colleges so as to make them fulfill the eligibility requirements.

It is, therefore, proposed that adequate development assistance must be provided to all the 8272 left out colleges and 153 universities (including 45 deemed universities) to enable them meet the minimum eligibility

requirements so as to be able to access further development grants in future.

It is evident that there is a wide variation in quality of standard across different types of universities and colleges.

Even the universities that have been receiving the UGC development assistance are found to be of varying quality. An analysis of 111 universities that were accredited by the NAAC up to 2001 bears testimony to the fact.

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that the NAAC should start accrediting individual departments also of a university in addition to its overall grading, at the earliest. The committee emphasizes the urgent needs to identify efficient ways and effective strategies for expediting the assessment and accreditation by NAAC within a stipulated time frame.

9.5**.** It is suggested that the following existing schemes on quality improvement may be continued: -

1. Universities with Potential for Excellence (UPE)
2. Colleges with potential for Excellence (CPE)
3. Special Assistance Programme (SAP)
4. Major Research Project (MRP)
5. Faculty Improvement Programme (FIP)

9.6 The following New Schemes for Quality Improvements are proposed during XI Plan:

(i) Establishment of IQAC in NAAC accredited Colleges, with a provision to appoint a full-time coordinator of IQAC.
(ii) Support for quality improvement in teaching and learning through appropriate project development and funding. Funding to be made on specific/focused training modules as approved by an expert committee.
(iii) National qualifications frame work to be developed through funded research projects.
(iv) Strengthening of College Development Councils in Universities
(v) Bench marking of best practices in the Institutions and incentives for innovative benchmark developments.
(vi) ICT training for teachers may be made mandatory in a phased manner.

(vii) The 'in house' capacity (Staff and resources) of NAAC to be enhanced as a National Quality Assurance Agency.

(viii) A thorough review of criteria for recognition, to receive financial assistance under sections 2(f) and 12B of the UGC Act.

9.7 Capacity Building for Teachers in Higher Education – Strengthening of Academic Staff Colleges:

The Academic Staff Colleges (ASC) was started in the year 1986-87 to train the College and University teachers of the country. Presently there are 52 ASCs. The ASCs are conducting orientation programs, refresher courses and workshop for Principals. In addition to these ASCs, the UGC has identified 31 Universities and specialized institutions as UGC-Refresher Course Centers (UGC-RCC) to conduct

specialized refresher courses. The UGC has been providing cent percent financial assistance to the ASCs and UGC-RCCs. An innovative approach is the establishment of computer labs in each academic staff college. The 2006-07 budget allotted for this programme is Rs. 20 crores.

9.8 Recommendations for Improvement

- Each central university to have Academic Staff College.
-
- The ASC and UGC-RCC programmes are confined to teachers working in colleges recognized under Section 2(f) and 12B of the UGC Act, which constitute less than 30 % of the total teachers of about 4.5 lakhs in the country. Certainly the programmes of the ASC and UGC-RCC must be opened up to all teachers working in institutions of higher education in this country, including those in self-financing institutions. In case, the number of participants in a particular state exceeds the number, which can be accommodated in the academic staff colleges of that state, then, such aspirants for training may be permitted to take courses in other states as well.
- Participation of academic staff at all levels (not just up to Reader's level) in the courses offered by the Academic Staff Colleges should be made compulsory. In other words, participation in these courses need not be linked only to eligibility for promotion.
- The courses designed by the Academic Staff Colleges should be reviewed at regular intervals in order to dovetail them to the changing needs in the context of globalization.
- Since UGC is concerned with institutions of higher learning and research and also since teaching and research should be considered as complementary to one another, the research institutions of national importance such as those coming under the purview of ICSSR, ICMR,

ICAR, etc, should also be considered eligible to conduct refresher courses and programmes that are supported under the framework of ASCs. Care should be taken to avoid overlap while ensuring fuller utilization of the resources available with the research institutions.

- The methodology of the ASC teaching programs must be changed. The existing training programs are mainly lecture based (more than 6 hours a day and 6 days in a week) and the teachers find it boring and uninteresting. The lecture-based programs must be changed to lecture cum self-study approach. The teachers may be asked to prepare term papers on the lecture topics and present and discuss those in the classroom. An action component may be integrated with the contents of the program.
- The ASC programs are currently of three weeks duration. As many institutions are moving towards the Choice Based Credit System (CBCS), granting leave to a teacher for three weeks (20 % of a semester teaching time) would affect the teaching work. A modular approach may be introduced. That is, the entire program may be divided into 5-10 modules and one module can be taken up each week, preferably during Friday and Saturday, so that an orientation or refresher course can be completed in a semester.
- The participants must undergo rigorous examination (both written and oral) to be eligible to receive the certificates.
- The ASC must expand its activities and train non-teaching staff also.
- Both teaching and non-teaching staff must be trained in e-governance and ICT so that the Universities and Colleges can adopt these developments in administration as well as in teaching.
- Suitable changes may be introduced in the UGC Guidelines for ASC keeping in mind the recent experiences of the ASCs themselves. A study may be initiated to compile and analyze the responses from the ASCs on a census basis. Information may be gathered regarding the constitution of the Advisory Committee for ASCs, delegation of powers, composition of participants from within and outside the states, norms for expenditures on different heads and introduction of some flexibility in this regard, honorarium to the faculty, coordinator, expenditure on teaching learning material, TA, DA, ASC building expenditures, etc.
- A suitable mechanism for ongoing evaluation of the entire program of Academic Staff Colleges should be evolved instead of one time review of the program.
- The important recommendations of the Review Committee of Academic Staff Colleges of 2004 deserve serious consideration.
- The Academic Staff Colleges should design courses for academic and non-academic staff *even before* they enter the service. The completion of at least one such pre-service course can be considered as a pre-condition for entering the higher education service.
- Academic Staff Colleges should be started in regions and institutions wherever such facilities are not available.

- In view of the newer challenges and also considering the inflationary trends, the group recommends a step up in the per participant expenditure from Rs.5000 to Rs.10,000. This may provide the basis for estimating the total financial requirements of the program during the XI Plan.

Chapter – 10

MAKING HIGHER EDUCATION RELEVANT

10.1 Introduction

The fact that education should be meaningful for life cannot be contested. However, the term 'meaningful for life' can be interpreted in economic, social, and intellectual terms. The economic meaningfulness of education means that education should enable an individual to acquire certain skills that help him to get a decent income through self-employment or through working on some remunerative job. It might thus mean that education should improve one's own economic status, and in the process, the economic status of the country. Hence, education should equip an individual for some career that has significant economic advantages either in the short run, medium run or in the long run. This is what is meant by 'relevant education'. Vocationalization assumes a special significance under the career oriented program at the graduate and post graduate stages, as it is at these stages that the students need to enter into the world of work and into the income earning activities to support the family.

It should also be emphasized that constant innovations are necessary to make education at all the levels meaningful and relevant, as there are continuous changes in the economy and the skills acquired through such specific programmes of vocationalization are likely to become obsolete within a short period.

The Parliamentary Standing Committee in its 172nd Report has recommended that relevance of Higher education should be seen with reference to marketability of the Graduate and Post-Graduate students it produces; with reference to its reach to marginalized sections and its relevance for the socio-economic development of a society.

10.2 Parameters evolved

There is need to examine the relevance of higher education in a conceptual framework for the long term, medium term and short term goals, in terms of jobs and career, specific challenges in life consisting of event management or crisis management, etc. and with regard to societal values, individual values, cultural aspects and situations of non neutrality of individual values, societal values and national values.

Relevance shall be considered as a dynamic concept and a multi faceted concept**.** In this sense, the issue of relevance of higher education needs to be considered in a rolling plan framework and under a multidisciplinary perspective. Care should be taken to ensure that the contents of Higher Education have continuity with the contents of previous levels of education so that students are

not confronted with the jerks in their pursuit of education. Efforts shall be made to establish mechanisms for considering the issues of inter- stage continuity, through regular interactions with apex organizations dealing with secondary and higher secondary stages of education. Care should also be taken to *ensure inter stream continuity* so that there is no ad-hocism in taking particular courses and subjects in the conventional stream, which may lead to wastage and stagnation in higher education, as job compulsions for students might lead to ad-hocism in adoption of streams and courses by them. Care also needs to be taken to ensure that this would not affect flexibility of students to opt any type of combination of conventional stream with the add on career oriented courses. A mechanism for testing a student's aptitudes should be evolved so that the chosen higher education streams are not irrelevant to students' own inherent capabilities. Such an approach would help reducing the extent of wastage and stagnation in higher education. Special initiatives are required to link higher education and its contents with the challenges of globalization.

10.3 Making the Conventional Higher Education more relevant:

From this point of view, it is necessary to promote the concept that the conventional higher education is meant for developing a knowledge society to be supplemented wherever possible with a society of technocrats and professionals. The main system of higher education should be used in a supplementary way for vocational education wherever possible.

10.4 Career Oriented Programmes at the level of Higher Education during the XI Plan – A Suggested Approach

Present Scenario

UGC initiated a major program of vocationalization at undergraduate level during the VIII Plan Period. From 1994-95 till the end of IX Plan, 3086 colleges and 39 universities have been provided special assistance for the introduction of vocational subjects. The assistance amounted to nearly Rs.270 Crores during the period from 1994-95 to 2005-06. The year- wise break up of the number of institutions assisted by the UGC and the amount of assistance released is shown in the following table:

TABLE-30

Year-wise break-up of the number of institutions assisted and grant released since inception under vocationalisation of education (Career Oriented Programme) Scheme

S.NO.	YEAR	COLLEGES	UNIVERSITIES/ DEEMED TO BE UNIVERSITIES	GRANT RELEASED (RS. IN LAKHS)

1.	1994-95	190	19	2600.00
2.	1995-96	191	05	1741.00
3.	1996-97	324	07	2089.00
4.	1997-98	292	NIL	2354.89
5.	1998-99	320	NIL	2616.91
6.	1999-2000	216	NIL	1854.37
7.	2000-2001	109	01	1186.95
8.	2001-2002	209	1	2913.02
9.	2002-2003	335	NIL	1977.40
10.	2003-2004	368	02	2504.21
11.	2004-2005	228	02	2606.57
12.	2005-2006	304	02	2550.15
	TOTAL	**3086**	**39**	**26,994.47**

Since arts, science and commerce streams are the main disciplines in which maximum number of students are enrolled, UGC supported the career-oriented programmes under these streams. As a part of Arts and Social Sciences streams, as many as 143 courses were supported by the UGC in different universities. As a
part of the science stream as many 133 courses were supported. The UGC supported 78 courses as a part of the commerce stream for undergraduate programs.

These courses are add-on courses with the conventional higher education process. The diplomas or certificates are awarded on successful completion of the courses offered. There is a proposal that a degree may also be awarded against the courses, which needs careful examination. The courses are by and large of the duration of 3 years, which is co- terminus with the period of graduation. College or universities can opt for a maximum three courses as at present.

10.5 Issues emanating from the present scheme

The Parliamentary Standing Committee in its 172nd Report has recommended that inadequacy of funds should not act as an obstacle to vocationalisation of education. It would, in fact, reduce the undesired pressure on universities and institutions of higher learning. Adequate funds be allocated for this purpose.

It is felt that the UGC's career oriented programs should be based on the relevant information about the demands for skills in the economy, the financial requirements of the institutions offering the courses, prioritization of the courses and assistance from UGC which is linked to the priority and unit costs and the possibility of sharing the costs by the institutions from out of their own resources, wherever possible. The course priorities should be decided by the institutions

themselves according to the regional priority assessments and no external imposition in this regard is justifiable.

Subject to availability of funds, UGC should provide funding on priority basis those progammes that have a clear agreement of collaboration with employing organization such as industry, banks, insurance companies, marketing agencies etc. The institutions offering those courses may also indicate in their application for funding, details about the placement of the pass-outs with or without such partnership.

10.6 Financial Support: A suggested approach, for XI Plan.

The unit costs for the programmes can be worked out considering the space requirement, payment for the faculty including guest faculty and the coordinator, teaching aids for conducting the course and provision for incidentals. The UGC may provide support for non-recurring expenditure, considering the space requirement per student. The remuneration for the coordinator and the faculty need to be suitably raised to a realistic level. The number of students per course may be retained at 30 students as at present. However, normally there need not be any rigidity about the number of courses offered by an institution depending upon its capacity, faculty strength and needs of the region. The UGC assistance per course may be stepped up to Rs.14 lakhs, payable during the three-year period of the graduate course during the XI Plan. The number of courses offered may be raised to 1000 in each year of the XI Plan. These need to be designed with the involvement of the stakeholders. Also, larger number of colleges and university may be considered for the support during the XI Plan Period. This number may be raised from the present number of 306 institutions to at least 400 institutions.

CHAPTER- 11

USE OF ICT IN HIGHER EDUCATION & INTER UNIVERSITY CENTRES

11.I Introduction

Evolution of higher education system in India is being guided through the realities of knowledge driven force of 21st century. The challenges are of complex and diverse nature, leading to multi-disciplinary approach with focus on upliftment of all sections of society, irrespective of their background and location.

In the modern world, it is true that highly specialized education has got its own importance. The scope and demand for higher education is constantly increasing. The new pattern involves the creation of intellects of world standard

(which means promotion of global standards in institutions of higher education) and also training of skilled manpower on a mass basis without compromising on quality (and that means making quality an integral part of the working of institutions of higher education). The world will be looking for trained persons in all basic fields with a sound knowledge base in their core discipline and with the ability to adapt to new demands. All domains of knowledge cannot do without ICT. Hence resource-sharing and innovative quality information based programs are the need of the hour under the threat of escalating costs due to globalized economic trend.

11.2 10th Plan Achievements:

During the X Five Year Plan, UGC has embarked upon promotion of ICT in a moderate level by providing UGC INFONET, e-Journal Consortia, e-Content Development and moving towards e-education among the Universities by spending over Rs 180 crores. The presence of IT culture and use of e-resources, creation of e-content/digitization has started appearing in the university campuses by way of having access to about 4400 e-journals to 100 plus universities covered under UGC INFONET.

There is a vast amount of untapped wealth of contents with the academics in the Universities and Colleges across the country, which needs to be preserved in the digital form for enhancing the wealth of knowledge base, which can be shared through computer based communication networks. So far, under the aegis of UGC, INFLIBNET and CEC in collaboration with ERNET, India have made remarkable contributions in 149 Universities during the X Five Year Plan, covering all the states, using Broadband LL/SCPC/DAMA/FTDMA/RF Open Network Architecture. Besides , 100 plus Universities were covered with high quality e-journals in discipline covering 4443 full text titles.

11.2.1 UGC-INFONET Connectivity

UGC-Infonet is one of the prestigious program of University Grants Commission for building high speed Nationwide Communication Network for Indian Universities. ERNET/INFLIBET is regularly monitoring and organising series of Network management training program for Computer Professionals, System Analysts from universities to manage/maintain the UGC-Infonet at their respective universities. The main features of the scheme are as follows:

Features

- UGC-Infonet is a vehicle for distance learning to facilitate spread of quality education all over the country.
- UGC-Infonet is a tool to distribute education material and journals to the remotest areas of the nation.
- UGC-Infonet acts as a resource for researchers and scholars for tapping the most up-to-date information.
- UGC-Infonet forms a medium for collaboration among teachers and students, not only within the country but also all over the world.
- UGC-Infonet acts as an Intranet for University Network.
- UGC-Infonet encompasses entire University Systems for most efficient utilization of precious network resources.
- UGC-Infonet establishes a channel for globalisation of education and facilitate the universities in marketing their services and developments.

As on date, 149 Universities across the country are connected under UGC-INFONET Project with SCPC/DAMA/FTDMA/RF /Leased line in the bandwidth range of 256 Kbps/512 Kbps/1Mbps/2Mbps.

11.2.2 UGC e-Journals Consortium

University Grants Commission (UGC) initiated a programme to provide electronic access over the Internet to scholarly literature in all areas of learning to the University sectors in India. A bouquet of E-Journals was presented to the Nation by His Excellency, the President of India Dr. A P J Abdul Kalam on 28th December 2003 coinciding with the conclusion of the UGC's Golden Jubilee celebrations. This program is wholly funded by the UGC and executed by INFormation and LIBrary NETwork (INFLIBNET) Centre, Ahmedabad. All universities eligible to receive grants under UGC's purview are the members of the programme, and it will gradually be extended to colleges in phased manner.

Through the UGC-Infonet, access to about 4400 scholarly journals and databases are made available to 100 plus universities since January, 2004.

The UGC-Infonet E-Journals Consortium is a successful initiative taken in the country to serve faculty and students working in the universities and colleges. The benefit of consortia-based subscription to electronic resources is made available to 100 plus universities and many other universities were given trial access. The consortium attracted the best possible price and terms of agreement from the publishers and it has been observed during the last one year that every major publisher wants to become a part of this initiative and is ready to provide the best possible economic model. The UGC-Infonet consortium is one of the best models in the world in terms of ***economic feasibility***, wider reach and coverage. The consortium provides access presently to more than 4450 electronic journals from 25 publishers and aggregators.

Savings under UGC-Infonet is calculated in terms of difference between cost paid by the consortium for member institutions for e-resources and cost payable by individual universities in case the resources were subscribed by them on their own. There is a mammoth savings to the national exchequer to the tune of Rs. 113.20 crores in 2004 and Rs. 231 crores during 2005 with overall figure of approx Rs. 350 crores as saving approximately considering the fact that the same resources on list price would have cost Rs. 130.11 crores and Rs. 257 crores as against Rs. 16.91 crores and 25.92 crores for the year 2004 and 2005 respectively.

11.2.3 *Digitization of Doctoral Thesis*

INFLIBNET and some other universities/agencies have developed and are maintaining the bibliographic records of Ph. D. thesis database submitted to various universities in India. INFLIBNET database itself contains over 1,55,000 records. These database provide bibliographic details of Ph.D. or doctoral dissertations awarded by around more than 200 universities. This database is being updated regularly. The database contains records starting from 1905 till date and all live subjects are covered in database records. Full text of theses are to be made electronic and stored with a central agency so that one stop access will be available. Digitization of such theses is to be made on priority basis.

11.2.4 Development and Maintenance of Union Catalogue (Books, Serials and other non book materials)

India's higher education system comprising 360 universities and 17625 colleges has generated an enormous set of scholarly bibliographic resources. At present, access to and exploitation of these resources, other than at local level, is often patchy. INFLIBNET in 10th five year plan had made an effort to develop digital repository of 142 university libraries wholly funded by UGC under library modernization programme. The Centre has developed online union catalogue which comprises of eight million bibliographic records and provided building

blocks of resource-sharing infrastructure both at national and regional level for university libraries in India. The Centre is playing a pioneering role in helping academic libraries across the country to make them more productive, integrated and visible on the Web by providing access to materials that individual libraries do not own. It retrieves nation wide bibliographic data of over a hundred libraries through one single website, and serves as the best browsing platform for academic research and educational development. The access to union catalogue will expand its scope by incorporating records in other than English Language including French, Germen, Russian etc. besides all Indian Languages such as Hindi, Urdu, Marathi, Gujarati, Telugu, Kannada, Malayalam etc. Not only the records from funded universities will be compiled during the XI plan, but also the bibliographic records of all academic libraries, R & D Institutions including colleges.

11.3 XI Plan Vision and Strategy

During the XI Plan period, it is proposed to spread the coverage of ICT to all the 360 Universities and 17625 Colleges in a phased manner. The benefits yielded by the Programs during X Five Year Plan would be continued and harvested for revitalizing and empowering intellectual hubs (Universities and Colleges) of the society through network, e-resources, online learning, access to global resources, archiving of contents and e-learning management techniques so that these reforms contribute immensely to enhance the access parameters in general and in particular to various Social Groups, Minorities, Women, Backward and remote areas.

In the first phase, it is proposed to cover 200 Universities and 5000 Colleges***** across the country for achieving the desired objectives by using Broadband, Wireless, DSL, Leased line/TDM/FTDMA VSAT/SCPC/DAMA/Radio Frequency link, for establishing connectivity depending upon the geographical location in phased manner: This will include the following provisions:-

A) Access to global resources including multimedia based educational content through Networking of Colleges and Universities.

B) Platform for collaboration among teachers and students using Communication Networks.

C) Better access to E-Contents (E-journals and E-books).

D) Digitizing of Indian intellectual Content (Ph.D. Theses/Dissertations)

E) Development and Maintenance of Union Catalogue (Books, Serials, secondary serial, current holdings etc. and others non book materials for Universities and Colleges).

F) Audio/Video conferencing system at Universities.

H) Manpower Training.

11.4 Inter University Centres

Inter University Centres were established by UGC to provide common facilities to a group of universities which can not be replicated due to high cost involvements. The IUCs are recognised as Centres of excellence and their main task is capacity building for human resource development. The significant contribution of the IUCs has been empowerment of the University community and enabling the use of front ranking world-class research facilities, which are not available elsewhere. They all have maintained high level of achievements over the years and the activities need to be continued and enhanced. The IUCs have brought into focus a new dimension of research in the Indian scenario that is of cooperation and synergy between large number of faculty and students from different universities, colleges and national institutes. The contribution of the IUCs have been recognized by peer groups e.g., the recently prepared INSA-IASc document on higher education and research mentions that establishment of the three research IUCs as one of the successful UGC initiatives in the past decade or two to upgrade science education in Universities. Three of the six IUCs, namely, IUAC, IUCAA and UGC-DAE CSR are primarily research based and have been providing quality in research. Other three IUCs, viz, CEC, NAAC and INFLIBNET are primarily serving quality of excellence. The National Centres, viz, WRIC, Crystal Growth Centre, MST Radar Facility and IUCHSS have been serving the university community of researchers while being managed by corresponding universities.

Although there is a common thread of providing service to the university community by all IUCs, each has some distinct features and missions and has achievements to its credit that merit individual mention. These are enumerated below.

11.4.1 Inter University Accelerator Centre (IUAC)

Established in 1984 as the first Inter University Centre, its mission is "to provide within the university system world class facilities for accelerator based internationally competitive research in focused areas of several disciplines, e.g., Nuclear Physics, Materials Science, Atomic Physics and Radiation Biology. This IUC has the dual role i.e. to establish world class accelerator along with the experimental facilities and to create adequate infrastructure for enabling the university community to undertake internationally competitive research. "

The Centre has been quite successful in achieving its objective of providing a world class accelerator facility for research within the university system and operating the system round the clock, seven days a week as a user facility with an uptime of better than 95%. It has been able to bring in the culture of working together in large projects and is catalyzing the collaborating efforts between the

university and the institutes. It has revived the culture of research in many University departments and Colleges and has enhanced the quality of research as evidenced by the improving standards of Publications. It has been able to keep pace with the progress of research by augmenting the facilities continually. It is generating valuable human resource by providing training in high technology areas. The user community consists of researchers from 69 Universities, 43 Colleges and 47 National Laboratories including all 7 IITs. About 100 students have obtained their Ph.D through the work done at IUAC and currently about 80 students are utilizing the IUAC facilities.

11.4.2 Inter University Centre for Astronomy and Astrophysics (IUCAA)

This Centre was established in 1988, as an autonomous centre of excellence to help initiate, nurture and grow teaching, research and development activities in Astronomy and Astrophysics in the University sector. Besides conducting a vigorous research program of its own, IUCAA was expected to function as a field station and resource centre in the fields of Astronomy and Astrophysics, and provide general guidance and help for Astronomy and Astrophysics activities in India and neighbouring countries.

A 2 m telescope and an observatory has been set-up at Girawali recently and opened for observations in May 2006. An intensive training program for researchers and students who wish to use the observatory is being planned in January 2007. The Observatory will generate new observational culture in universities/colleges and will give a boost to Astronomy.

The Instrumentation laboratory at the Centre has been used to design and fabricate next generation instruments and control systems for the observatory as well as providing technical support for its operation and maintenance. In addition, the Laboratory has helped universities to make small telescopes. The know-how for a fully automated 0.35 m. telescope, developed at IUCAA was passed on to groups from two universities, namely, Bangalore and Bhavnagar.

A virtual Observatory has been set up in collaboration between IUCAA and Persistent Systems Pvt. Ltd. (PSPL), Pune, which will allow storage of vast quantities of astronomical data from various observatories. This project has been funded by the Ministry of Communication and Information Technology and PSPL.

Radio physics laboratory has been set up to create awareness among the science/ engineering students and teachers in the university about Radio Astronomy, and to develop and promote both technical and cooperative project skills using the medium of radio telescopes and laboratory experiments as vehicle. A 2.5 m. size MIT radio telescope was purchased, for which installation work is in progress.

11.4.3 UGC-DAE Consortium for Scientific Research (UGC-DAE CSR)

This Consortium was established as the “Inter University Consortium for DAE Facilities” (IUC-DAEF) in 1989. The Consortium had the mandate of making three major “Big-Science” facilities of DAE available to the researchers in the University system. These three facilities are the Dhruva Reactor at BARC, the Variable Energy Cyclotron at Kolkata, and the Synchrotron Radiation Source at Indore. Accordingly, the Consortium established three Centres at Indore, Kolkata and Mumbai, with the head office at Indore. A new MOU was signed between UGC and DAE in Dec. 2003 and the name of the Consortium was changed to “UGC-DAE Consortium for Scientific Research”, hereafter referred to as “UGC-DAE CSR” or simply “Consortium”. Before signing of this new MOU, the activities of Consortium were largely confined to research in physical sciences. The new MOU envisages that the Consortium should expand its activities to cover other disciplines such as Chemical Sciences, Life Sciences and Engineering Sciences as well.

Consortium has developed a large number of world-class research facilities. In particular, a beamline for Photoelectron Spectroscopy has been developed on the Synchrotron Radiation Source INDUS-1 and is fully operational for the last 6 years. Another beamline for Neutron Diffraction measurements has been developed with the active participation of university scientists on the Dhruva Reactor at BARC, and has become operational in September,2006.. These beamlines, in addition to long term CRS, also allow users from the university system short-term, one-shot utilization of the neutrons and synchrotron radiation. Development of a large multi-clover gamma-array, started by the Kolkata Centre of the Consortium in 1998 jointly with universities, VECC and BARC/TIFR has grown into a very large national facility-Indian National Gamma Array (INGA) is expected to be completed in 2008. Kolkata centre has been a major contributor towards research, development and utilization of facility in its phase I installations at BARC/TIFR Accelerator, IUAC and VECC. The DAE accelerator utilization by universities for these INGA runs was supported exclusively through Kolkata centre. During the X Plan period, a Low Temperature High Magnetic Field facility, which is arguably the best in the country, has been commissioned at Indore Centre with part financial assistance from DST. The Thin Film Fabrication and Characterization facilities at Indore Centre are again among the best in the country.

11.4.4 Centre for Educational Communications (CEC)

University Grants Commission has set up Education Media Research centres and Audio-Video Centres in order to develop the video programs in various subjects in the 80s. To be precise, it started from 15 August, 1984. As on today, there are 17 media centres in the universities located in different parts of the country. These have been renamed in 2005 as Educational Multi Media Research Centre. CEC was set up in 1993 to coordinate the activities of the media centre, assure quality of programs and to disseminate the programs developed by media centres.

Today CEC has knowledge resources in the form of video program. There are 15,000 video programmes. About 9,000 are enrichment programs in 50 subjects and about 6,000 are syllabus based programs. Every year CEC is adding about 1000 programmes during the last 3 years as compared to an average 300 programmes during the last one decade.

11.4.5 National Assessment and Accreditation Council (NAAC)

Established in 1994, its mission is "to make quality the essential element of higher education in India through a combination of self and external quality assessment and accreditation."

Towards this end it undertakes periodic assessment and accreditation of institutions of higher education or units thereof, or specific academic programs or projects. It encourages stakeholders' participation in quality assessment, encourages higher education institutions to develop internal systems and processes for quality assessment, promotes the development and dissemination of best practices as benchmarks of assessment and quality enhancement, and collaborates with other agencies for quality assessment in higher education.

Till date, NAAC has accredited 129 out of a total of 165 University-level institutions and 2956 colleges out of the total of 5273 colleges. It would like to expand its activities to reach a larger percentage of higher education centres and also to engage in research on the methodology of new accredition parameters. Research related quality assurance in higher education, continuous modification and fine-tuning of the assessment instrument and analysis of assessment and accreditation: related documents, is imperative to any quality assurance agency.

11.4.6 Information and Library Network (INFLIBNET)

Established as a full-fledged IUC in 1996, its mission is "To usher the country in the era of Information Technology allowing the academic and research community to derive its benefits. To create a wave of awareness through out the country about IT and to improve capability in information transfer and access, that provides support to scholarship, learning, research and academic pursuits. To carry out modernization of libraries and information Centres in the country, with application of computer and communication technologies. To establish computer communication network for linking libraries and information Centres in universities, deemed to be universities, colleges, UGC information centres, institutions of national importance and R&D institutions, etc. avoiding duplication of efforts. It is basically a cooperative endeavor in resource development, sharing and its utilization at national level using the IT enabled services."

11.6 Other National Centres:

11.5.1 Western Regional Instrumentation Centre (WRIC)

The Western Regional Instrumentation Centre (WRIC), Mumbai is a National Facility Centre under the Inter-University Centre. The Centre is entirely funded by the UGC since its inception in 1977. The Centre has undertaken a number of projects from institutions like, DST, DBT, Centre Institute of Fishers, DOD & other Private sponsors.

11.5.2 Crystal Growth Centre (CGC), Anna University

The Crystal Growth Centre had been recognised as the CGC: UGC -Anna University Facility for Crystal Growth through an MOU between UGC and Anna University. The major objectives were to provide research facilities and to train researchers from all over the country to grow technologically important crystals and work on frontier areas of research and development. The significant achievements include growing technological important crystals and to initiate a National Facility towards the establishment on Nano devices and semiconductor Nanostructures.

11.5.3 UGC-SVU Centre for MST Radar Applications

MST Radar, Lidar and other collocated facilities are established as a major National Facility at Gadanki, 35 km off Tirupati. The availability of such a front line, state-of-the art instrumentation in close proximity to S.V. University offers an excellent scope and opportunity for research in the area of Atmospheric sciences. To make best use of these facilities, S.V. University has taken a lead role in creating UGC-SVU Centre for MST Radar applications devoted to research in atmospheric sciences.

UGC-SVU Centre provides all the support in formulating and conducting the experiments, data processing facility and data analysis and interpretation of the results. The Centre in collaboration with National Atmospheric Research Laboratory (NARL) conducts winter schools, user scientist's workshops, seminars and conferences. The centre also provides travel assistance and literature support to users. The Centre has organized comprehensive National data bank/ archival in specified areas of atmospheric sciences from the data obtained from MST Radar and other co-located facilities. The Centre has generated and updated models for the middle atmosphere over Indian latitudes, which are used by IMD and other national organizations.

11.5.4 Inter University Centre for Humanities and Social Sciences (IUCHSS), IIAS

An MOA between the University Grants Commission and the IIAS, Shimla was signed in 1991 for a period of 10 years, i.e. upto Jan 2001. The man objectives of the Centre are to invite teachers from universities and colleges to the institute as associate of the IUC, organise "Research Seminars" for discussing important

problems of national and International interest. The Commission has now decided to assist this centre on project mode basis.

11.6 XI Plan Approach and Target

The IUCs have been very effective vehicles in which relatively small investments in resources (both human and materials) have given very large dividends to a large University community. They have been success stories of the investments made by UGC. It is proposed that during XI Plan, the activities of the IUCs should be expanded in order to increase their reach and usage by the University community.

It is felt that five new IUCs may be created in the areas of Life Sciences, Social Sciences, Linguistics, Rural higher education and Higher education research for policy and planning. The WRIC should be upgraded into an Inter University Centre for Instrumentation and the Crystal Growth Centre may also be considered for upgradation to an IUC.

Keeping in view the past performance and achievements of the IUCs, it is proposed that they should be further strengthened in XIth Plan. The proposals for XIth Plan for each of these IUCs are given below:-

11.6.1 Inter University Accelerate Centre (IUAC)

During XI Plan, it is proposed to improve Research Output. The target group for this activity would be the faculty and students in the areas of Nuclear Physics, Materials Science, Atomic Physics and Radiation Biology. The Accelerator Facility would be augmented & High Uptime, shall be maintained. The augmentation of the Accelerator and Experimental facilities would enable the Centre to give access to larger number of users. At the end of the XI Plan, it is expected that both the Pelletron and the High Current Injector-cum-Linac would be able to run in parallel. The LEIBF would also run as a full-fledged user facility. The total number of users is expected to be doubled at the end of XI Plan. It is proposed to improve the experimental infrastructure related to ion-beams in selected Universities for capacity building in the University system for experimental research. It is proposed to establish a network with adequate staff for designing and developing low-cost innovative experiments at the undergraduate and postgraduate levels. This program would target not only the University science departments but also, Engineering Colleges. The programme, later on, can be extended to schools (at 10+2 level) through organizations like KVS, Navodaya Vidyalayas, NCERT, EDUSAT. The regional Centres and the National Centres like WRIC and other institutes could also be involved in this program.

11.6.2 IUCAA (Inter-University Centre For Astronomy and Astrophysics)

During XI Plan, IUCAA plans to develop Instrumentation for the IUCAA Telescope and Observatory and Sustained Development of the High

Performance Computing. It would establish virtual Observatory-India, High Speed Internet Connectivity and Computing Facilities. It is also proposed to enhance collaboration, time sharing of Large International Astronomical Facilities and start Public Outreach Programme through Science Park Development Educational. Training Facility for Radio Astronomy would be created and Observing Equipments and Small Telescopes would be installed.

11.6.3UGC-DAE CSR (Consortium For Scientific Research)

It is proposed that during XI Plan, the three centres must concentrate to retain their leading positions in specific areas of research and characterization facilities of general interest to university researchers should be set-up at all the three centres. Some repetition of in-house facilities between the three centres is desirable as these centres are geographically located in different regions of the country. It is also suggested that university scientists should be encouraged to pursue research in new areas like RF Cavities using Superconductors. Efforts shall be made to start research activities in Biological, Chemical and Engineering Sciences, since the Consortium will be successful in facilitating collaborative programs with DAE only if the Consortium itself has active research programs in these areas.

11.6.4 CEC (Consortium For Educational Communication Centre)

During XI Plan, the CEC should help in expansion of higher education by launching technology enabled system for mass higher education and promoting the use of e-learning resources in formal education system, so as to improve the quality of education and to enable the system to enroll more students with existing resources. CEC therefore, proposes to set up a technology enabled system of mass higher education by taking advantage of Vyas 24-hours Education Channel for one way communication, EDUSAT network for two way communication and, Internet for ‘any time anywhere’ education. The thrust areas will include strengthening of the existing media centres, setting up of new media centres in those States where no centres exist, strengthening of the concepts of packaging knowledge in video and e-content form in need based subject areas, transforming the CEC and media centre into virtual university system . These would provide technology enabled mass higher education, training of the teachers to enable them to develop e-content as well as use e-content in classrooms, and would strengthen research and development so as to assess the needs, assure quality and assess the impact of technology enabled mass higher education.

11.6.5 NAAC (National Assessment an Accreditation Council)

During XI Plan, NAAC would further strengthen its assessment and accreditation activities, Quality assurance and quality promotion activities including the pre and post accreditation strategies. It is proposed to consider Multiple accreditation bodies for validating and giving recognition for assessment and accreditation.

NAAC will validate the accrediting agencies and set the standards for quality assessment in higher education for these agencies, to function within the framework laid down by NAAC.

NAAC would enhance its capacity building through 'In house' research on data accumulated after A/A and relevant analysis, mandated research funded by NAAC and research through project proposals funded by other funding agencies, The human resource development would be developed through assessor training, training of resource persons for quality, promotion activities, training for quality assurance councils of the States, training for IQAC of Institutions, training for TQM, and virtual training 'on-line'. Library and information services would be strengthened through periodic NAAC publications, SSRs and SARs, IQAC reports, books for reference, secondary resources, virtual library with IT and ICT connectivity, ICT Services would be upgraded through ICT organization with structural pillars, Service delivery systems, technologies for transformation, establishment of network hubs. The collaborations with other professional national and international accreditation agencies shall be done.

11.6.6 WRIC (Western Regional Instrumentation Centre)

Considering the fact that instrumentation is a capital intensive interdisciplinary subject and that the WRIC is a national facility centre, it aims at building infrastructure to suit nationwide requirement in this area and to grow as a catalyst in providing leadership in the field of instrumentation. It envisages to develop some new facilities and upgrade it to an Inter University Centre.

11.6.7 Crystal Growth Centre

The Centre proposes to create a Centre of National Significance, Upgrade the facilities with equipment, building, manpower and support, deliver application specific crystals and to interact with industries on research oriented towards applications during XIth Plan.

Crystal Growth Centre is proposed to be upgraded to Inter University Centre. The status will strengthen the ongoing programs and will also create better avenues to promote International Status of the Centre. The excellent facilities created over the past three decades can be put to more beneficial use for the research community all over the country if the present Centre is recognized and given the status of an Inter University Centre.

Utilization of the MST Radar, Lidar, Lower Atmospheric Wind Profiler (LAWP) and other facilities at NARL is planned to be enhanced through the addition of a few instruments. Research would be continued in the areas of Mesospheric dynamics, Precipitation studies using MST Radar, LAWP, Disdrometer and TRIMM, Boundary layer studies, rain attenuation and mobile communications, Gravity Waves, Aerosol characterization, Temperature field and its variability in

middle atmosphere, Water vapour and troposphere cloud characterization using Raman Lidar and Mesospheric Sodium layers using Dye-Laser.

CHAPTER - 12

RESEARCH

At the dawn of independence, universities in India were the focal points for both teaching and research. However, since the late 1960's there has been a massive erosion of research, particularly experimental research, in most universities. This task of quality research has been taken over by a large number of small, well-equipped and reasonably well-funded institutions. Over the years, the Universities have become more and more teaching institutions.

The Parliamentary Standing Committee in its 172nd Report has recommended that the following measure to help make research a mainstay of our higher education. Governments, both Central and State and other funding agencies should provide organized support to research activities for modernizing laboratories and removal of obsolescence in equipments on regular basis.

The base of sciences in the university needs to be rebuilt and strengthened by taking newer initiatives in the frontier areas. The Committee is of the view that utility of social sciences to our society, polity, economy, etc. cannot be overlooked. They add value to one's life and any study that is value-free, in fact, tends to become sterile. The Committee, therefore, is of the considered opinion that this imbalance needs to be corrected immediately by making the study of social sciences scientific, interesting and relevant to present situation

12.1 Given the overall policy of expansion of the Universities in the XIth Plan, it is absolutely critical that Universities should be provided with adequate level of support for each of the faculty member to conduct research so that standards improve and doctoral students are given reasonable training. To fulfill these objectives, the following are proposed.

- To enhance the quality of teaching, learning and research, the UGC should identify institution (colleges) offering postgraduate and research programmes and encourage them with liberal research grants and provide broadband and digital resources (inflibnet etc.). Postgraduate and research departments should be encouraged to do more research and their workload (teaching) should be considerably reduced.
- Age limit for women teachers may be extended for award of research grants

- Priority should be given to achieve maximization of the level of access to research journals and development of e-journals.
- Besides providing research grants directly to the faculty, steps may be considered to make provision for Research Associates, Teaching Assistants and Post-doctoral Fellows for universities. The UGC can also extend matching grant for resources generated by a State university through consultancy work to build up corpus fund to promote further research.
- The Universities need to link their teaching and research initiatives with manpower training program and innovation and entrepreneurship.
- Research funds not only from the University Grants Commission but from other funding agencies also should be extended to the colleges. At least 200 undergraduate colleges in science, technology and social sciences should be provided additional assistance to develop them into colleges of Excellence.

- There are a large number of sanctioned faculty positions in universities that have been lying vacant for a prolonged period. Inducting talented faculty with a view to strengthening the research base should expeditiously fill up these positions.

- 1000 positions of Research Scientists at various levels equivalent to that of Lecturer, Reader and Professor need to be created.

- There is a need to create 10 networking centres in Basic Sciences (two centres each in Physical Sciences, Chemical Sciences, Life Sciences, Material Sciences and Mathematical Sciences) in leading Departments of Universities in different parts of the country to promote collaborative research, access to advanced facilities and training in frontier areas.

- Formal linkage between the Universities and national level institutions including CSIR laboratories be promoted through joint research projects and training.

- The system of both winter and Summer Schools must be supported. Each subject area of Basic Sciences may offer upto ten programmes a year. There should be a provision for visiting Fellowships for faculty within the Country.

- The number of Ph.Ds from Indian Universities should increase five-fold within a span of ten years with proper standards.

- Every institutions of higher learning should earmark 5% of its non-plan budget for the furtherance of research in basic sciences. 10% of the capital grant allocated to each University should be provided as annual

maintenance grants towards spare parts, annual maintenance contracts, some add-on facilities and repairs etc. The overhead charges provided to the Universities should be made uniform at 15%.

- Special Assistance should be provided to ten selected Universities to establish them as world-class premier Universities in the country.

- Leading postgraduate teaching universities and IITs should be encouraged to impart undergraduate science education.

- Encouragement be given to interdisciplinary movement between Science & Technology streams and industrial R&D by establishing 20 Engineering Schools that admit students with a bachelor's degree in Sciences for a two-year B.Tech. Degree in selected areas requiring strong science-technology interface.

- The competitive Grant System for Research and Development should be further strengthened.

- National Merit Scholarships should be provided for 1000 B.Sc and 500 M.Sc. students.

- Research fellowships for Ph.D students need to be enhanced.

- Meritorious doctoral students should be recognized through teaching assistantships with stipends over and above the research fellowships.

- Post-doctoral research culture must be promoted for improvements in R&D.

- Refresher courses need to be strengthened for improvement in quality of existing faculty.

- Meritorious scientists should be recognized by creating positions of National Professors.

- Working conditions for women in Science and Technology need to be improved, all major institutions of higher learning and research should have on campus crèches.

- Every faculty member of the University must be provided with the minimum contingency grant every year.

- About 50% of the funding available in the competitive grant system of various Government agencies should be specifically marked for universities.

- Research grant should only be used only for consumables, minor-spares, data collection and analysis, field studies and publications.

- All new faculty members in experimental areas should be given a start up grant to set up their research laboratories or to acquire the tools necessary for their research.

CHAPTER – 13
OPEN AND DISTANCE LEARNING SYSTEM

13.1 Introduction

The Open and Distance Learning (ODL) System has emerged as a vibrant and dynamic component of Higher Education Infrastructure in the country. It provides access to quality education to about 25 percent of the total population of learners in Higher Education sector. The system has demonstrated high levels of cost efficiency, flexibility and innovative applications of Information and Communication Technology (ICT) and created educational opportunities for the vast multitudes of learners left un-served by the formal system.

The Parliamentary Standing Committee on HRD in its 172nd Report has recommended that for a vast country like India where accessibility to higher education is quite low, Open Universities have the vast potential for taking Higher Education to more and more people irrespective of different barriers. This system caters also for in-service persons for whom it is second chance as well as for regular learners. It, therefore needs to be provided greater thrust by integrating utility courses with personal development with socio-economic problems. The courses offered could be mainly job-oriented as far as possible. High priority should be given for opening more study organization particularly covering rural and remote areas with concentration of SCs/STs and other backward communities students.

The ODL System is in the 11th plan period is expected to cater to about 40 percent of learner population in higher education. The system must also be prepared to take substantial responsibility to cater to the likely surge in the number of aspirants for Higher Education as a consequence of the Sarva Shiksha Abhiyan, apart from reaching the un-reached, marginalized, disadvantaged and those hitherto excluded from the reach of educational provisions.

The objective, functions and responsibilities of IGNOU are unique. As the National University, it has to seek viable solutions to meet the escalating demand for higher education and training, especially in the emerging areas of knowledge and improve the quality of life of the people. It has taken the lead to establish the credibility and viability of open and distance learning in the country. The University, through the instrumentality of DEC, has the responsibility of developing and maintaining standards for distance education, and providing financial assistance to state open universities and the correspondence course institutions.

This proposed outlay to support the open and distance-learning system during the Eleventh Plan period is Rs. 8116 crore.

A brief description of the activity-wise achievements under Tenth Plan is given below:

Table 31: ODL System

	At the end of IXth Plan			Achievement during Xth Plan (upto March 2006)		
	IGNOU	**SOUs**	**CCIs**	**IGNOU**	**SOUs**	**CCIs**
Total No. of Programmes	74	325	–	125	429 (2005)	1428
Total No. of Courses	854	–	–	1142	3.483	–
Total Enrolment	8.04	8.09	7.70	14.33	13.53624 (2004)	8.12 (up to 2004)
No. of Regional Centres	48	58	–	58	114 (2005)	–
No. of Study Centres	1081	2986	–	1346	4229 (2005)	2609 (2005)
Overseas Centres	30	–	–	37	–	–

Table 32: Media Infrastructure

	IXth Plan	During Xth Plan (upto March 2006)
Media Infrastructure Gyan Darshan	2	Bouquet of 6 channels (4+1 operational)
Gyan Vani Stations	–	23 functional and 3 on test-run
EduSat	–	2 Hubs + 131 SITs and 900 ROTs only
A/V Software	1175 (A) 1445 (V)	8000 (A) 2000 (V)

Table 33: Initiatives for Disadvantaged Groups

No. of Centres	123	164
Sub-Regional Centres	–	• 6 sub-regional centres established • National Centre for Differently Abled established

Table 34: Growth of OUs and CCIs

	IXth Plan	During Xth Plan (upto March 2006)
SOUs	9	13
CCIs	64	119

13.2 Growth of the Network of Regional and Study Centres

The University has, in the last one year, established Regional Centres at Jabalpur, Koraput and Andaman & Nicobar and Sub-Regional Centres at Rajkot, Madurai, Darbhanga, Siliguri, Varanasi and Allahabad. Also, 156 Special Study Centres for jail inmates, physically challenged, women and SCs/STs have been established. There are 61 Study Centres covering 8 Regional Centres in the North-East Region including Sikkim.

The following table depicts the growth of Regional and Study Centers during 10th Plan.

TABLE-35

Year	Regional Centres	Study Centres	Tele Learning Centres	Overseas Centres	Sub Regional Centre
2002	46	765			
2003	48	1081	29	23	
2004	48	1098	14	26	5
2005-06	48	1242	22	35	1

13.3 Gyan Darshan and Gyan Vani

Significant digitilisation of transmission achievements has been completed. A total of 4 'twenty four hour' channels plus one standby digital channel are fully operational. As on date, 24 Gyan Vani Radio stations are operational and 3 stations are in test run stage. By the end of Tenth Plan i.e. March 2007, the University plans to setup 37 Gyan Vani FM Radio Stations. It may be noted that this represents 100 per cent achievement as 3 out of 40 stations planned have now been shifted to the Phase-II activity of Gyan Vani station.

13.4 Rationale and justification

+ In its brief existence of forty-five years, the ODL system has demonstrated an impressive track record of providing quality education and training to large learner population. Cost studies at the university show that per student cost at the university is about 42 percent of those incurred by the universities in the conventional stream.

+ The open and distance learning system has demonstrated a growth rate of 20% during the Tenth Plan, and accounted for 25 percent of the total enrollment in the higher education sector. The Tables 1-4 above summarise the achievements so far under the X plan.

+ The system has also demonstrated the capacity to scale on account of the impressive applications of Information and communication technologies to create access and opportunity for learners across the length and breadth of the country. The diversity of learner profile in the system, comprising employed and unemployed, aspirants for employment, those seeking to upgrade their knowledge and skills while at work specially in professional careers, the disadvantaged and the marginalized, rural youth and those residing in remote areas, brings into sharp focus the capacity of the system to adapt to and provide for the learning requirements of a vast variety of target populations.

+ Over the years, the system has developed a wide delivery network. IGNOU itself today has a network of 53 regional centers (including the army, navy and air force supported regional centers) and 1,400 study centers with approximately 25,000 counsellors providing learner support services across the length and breadth of the country, which is augmented by a media infrastructure of 28 FM radio stations, and a bouquet of six television channels including Interactive channels. If the open and distance learning system is to meet the enrollment targets of 40 percent of the total enrollment in higher education, The delivery infrastructure needs to be augmented and expanded. The facility of DTH is to be extended for education in general and GD-1 and Edusat, in particular, to all SCs and PSCs.

13.5 Thrust Areas of the Open and Distance Learning System during he 11th Plan

13.5.1 Enrollment target during the 11th Plan **–** The ODL System, in the scenario of a growth rate of 20% in the student enrollment, is likely to account for about 30% of overall enrollment in higher education in the country. This will result in significant increase in the enrollment at the end of the 11th Plan, the ODL System should account for an enrollment of around 7 million students.

13.5.2 Development of New Programmes and Courses **–** Priority for academic programme development is a reflection of the educational needs of the society as well as the market requirement. The focus of the ODL System shall be to develop professional, vocational and career oriented programmes at certificate, diploma and degree levels. In conformity with its mandate, the system would like to retain its focus on skill development, vocational training and community development programmes.

Skill development programmes have been relatively underdeveloped areas in Open and Distance Learning (ODL). The development of two way interactive platform like Edusat, however has created a vast potential for instituting short term training for various trade and discipline in the open learning.

Continuing/life long education has become a necessity for the working population in the highly competitive, global marketing environment. ODL System is ideally placed to take care of the training/re-training. During the 11th Plan, the focused areas have to be the development of annual training calendar, development of training technologies and establishment of mechanism for accreditation of prior level and certification of the training, based on such accreditation and the training outcomes. A national quality framework for such competency and skills would have to be a priority during the 11th Plan.

Keeping in mind social needs and market requirements to create growing number of employable human resources in the country, the Eleventh Plan proposals for the ODL system require a special thrust on development of vocational programmes. As a policy measure, at least 10 per cent of credits being developed in each school should be devoted to vocational, employment oriented programmes targeted at enabling self-employment or increase in employability of people.

13.5.3 Media Infrastructure-Gyan Darshan, Gyan Vani and Edusat – The establishment of dedicated educational TV and Radio channels have provided a great impetus to ODL System in the country. During the 10th Plan, a paradigm shift in emphasis from enrichment programme to curriculum based learning programmes was attempted. During the 11th Plan, the efforts would be to develop complete audio visual curriculum based content on a course to course basis as well as on creating integrated media learning packages course-wise, which would be available both as CDs and as software on IGNOU's e-Gyankosh, the national repository on open learning material and integrated with One Stop Portal ***Sakshat*** of MHRD for use nationwide.

While one channel of Gyan Darshan (GD-I) was put on Direct to Home (DTH) access through the Doordarshan DTH platform, in the 11th Plan thrust will be to provide the interactive curriculum based channel (GD-II) through the DTH platform so that a large number of learners are able to interact through toll-free numbers directly from there own homes. This development would truly make education available at the doorsteps for learners in the remote and the most far-flung areas in our country.

IGNOU has been given the responsibility of developing an additional network of 15 FM Radio stations in the Phase-II for which provision of additional funds

will have to be made. Funds would also be required to develop large educational software in all regional languages for the 50 plus Gyan Vani Radio Stations that could be in existence during the 11th Plan.

The planned augmentation of network and production activities, as well as concession of Edusat based content into shareable educational content would require augmentation of human resources. Over the next five years, an augmentation of about 40 positions, including the teaching positions for the Regional Centres is proposed. 30 positions proposed for the headquarters include production, staff, transmission staff, staff for the Edusat related activities and technical staff, at various levels.

13.5.4 System Development **–** The ODL System in the last 20 years of its existence has become fairly established and shows escalating growth rates. The requirement of life long learning in the knowledge era and the facilitation provided by technology enabled learning will enable the system to have a fair and good impact on the way people acquire and utilize qualifications in the next decade. The system however needs inputs in terms of research, innovations, development of resource material and dedicated networks for efficient delivery, quality assurance and system upgradation. The following specific priority areas are identified for the 11th Plan.

13.5.5 N Node:

Building on the technological infrastructure foundations developed during the Tenth Plan, it is proposed to set up a dedicated three Tier communication networks between the Headquarters, Regional Centers and Study Centers. The communication network will also be mobilized between IGNOU Headquarters and the State Open Universities. Both ownership and lease patterns will need to be utilized in the interest of cost economy. Not only will this dedicated network reduce the total turnaround time for the vital processes of admission evaluation, declaration of results etc; it will also become the enabling framework for online admissions, online results, technology enabled monotoring as well as round the clock connectivity throughout the system. Broadband connectivity down to the level of Study Centres is also envisaged under the Eleventh Plan.

16.5.6 Edusat

Edusat, a dedicated educational satellite has created enormous opportunities for ODLS on account of two way interactivity and possibility of both asynchronous and synchronous connectivity between the teaching and

learning ends across the country. While an impressive setup of up to 131 Satellite Interactive Terminals (SITs) is in place, another fifty are being installed. It is proposed to enlarge this network to about 500 SITs to extend the access to the disadvantaged and those in marginalized areas. Additional funds will be required to procure and install required software and hardware for this new platform. It has also been decided to mobilize 10 teaching ends in the Edusat Network in addition to the teaching hub at IGNOU Hqs.

13.6 National Resource Centre for AV Material and Library

To prevent duplication of efforts and to have a common pool of the best quality material in the ODLS in print, audio/visual and multi-media based content, it is imperative that the National Resource Centre be created as a learning repository for all learning resources. This National Resource Centre should also function as sharable resource for all the R & D outcomes in the ODLS. The recurring requirement for library resource also needs to be maintained.

13.7 National Centre for Computational Application in Sciences

The Centre for computational application in Physics, Mathematics, Computer Science, Engineering and Design is proposed to be set up as a research and development unit for the entire ODL system and allocation of 20 crores is proposed for the Centre.

13.8 National Mission in Education through Distance Learning – as One Stop Education Portal

The VISION**:** India needs to leverage its knowledge resources to obtain and maintain the competitive edge in the world. This will require a system of identification and nurturing of talent and lifelong learning. Knowledge modules based on the personalized needs of the learner need to be delivered to him /her at the right time with the right content interactively to take care of his / her aspirations. In due course there is need to develop and maintain the knowledge and capability profile of every individual learner / worker. Such a system will have to be developed in a cost effective manner, integrating, inter-alia, the following components:

- Effective utilization of intellectual resources, minimizing wastage of time in scouting for opportunities or desired piece of knowledge appropriate to the need,

- Certification of attainments of any kind at any level acquired through formal or non formal means in conventional or non conventional fields,

- Anytime availability of desired knowledge at appropriate levels of comprehension to all for self paced learning,

- Platform for sharing of ideas and techniques and pooling of knowledge resources,

- Systematically building a huge database of the capabilities of every individual human resource

- Scholarship management,

- Nurturing of scholars and all the learners,

- Support to all the learners / workers for any of their perceived needs

- Extensively leveraging the advancements in the field of ICT for taking the knowledge resources at the door steps of the learner,

- Capability to handle the user base which is ultimately expected to cross 50 crores in the long run.

The ambition of India becoming a knowledge super power by effectively utilizing her abundant human resource faces the following weaknesses:

1. Abundance of talent – mostly un-nurtured
2. Lack of easy availability of knowledge resources to all just in time
3. Opportunities lost because of difficult access of information and guidance
4. Mismatch between demand and supply of knowledge and skills
5. Lack of collaborative learning
6. Questionable quality of teaching at various places
7. Non standardized testing
8. Lack of legal framework linking qualification and certification framework with prescribed requirements for the job and performance appraisal of those preparing the content and those delivering and teaching it.
9. Growing digital divide
10. Lack of personalized monitoring and long term tracking of learnings, skill upgradations and performances
11. Very low percentage of digital literacy
12. Lack of encouragement to excel
13. Substantial duplication of efforts at various levels
14. Time mismatch between school hours and employment hours for those learners who have to simultaneously earn the livelihood for their families.
15. Lack of access to institutions
16. Lack of access devices to digitally bypass shortcomings of Institutions and teachers
17. Lack of multi layered networks for knowledge absorption and knowledge propagation.

The following statistics would reveal the magnitude of the problem:

- Literacy rates: The overall literacy rate in the country as per 2001 Census was 64.8 %. Which means we have no formal means even to know about the talents of the remaining 35.2 % of the population, let alone try to nurture their talents. This reflects a very high under utilization of the nation's human resources.
- Growth of educational institutions: Between 2000-01 and 2003-04, number of Primary Schools has risen from 6.38 lacs to 7.12 lacs i.e., a simple rate of growth of 3.87 % p.a.. similarly, in the same period, the number of upper primary schools has risen from 2.06 lacs to 2.62 lacs i.e., a simple rate of growth of 9.06 % p.a..Plus 2 level institutions during the same period have risen from 1.26 lacs to 1.46 lacs i.e., a simple rate of growth of 5.29 % p.a.. In the same period, number of Colleges for general education have risen from 7900 to 9400 i.e., a simple rate growth of 6.33 %. With slow rate of growth in the number of educational institutions, there can not be hope to quickly make a dent on the base line educational status of the population. Hence, the conventional approach must also be aided and supported by the technological interventions through ICT technologies so as to make available the knowledge resources to every learner as per his / her convenience and just in time.
- Enrolment of students: The rates of rise in enrolment between 2000-01 and 2003-04 in Primary, Upper Primary and High / Higher Secondary classes has been 4.24%, 4.59% and 8.93% respectively. At this rate, unless alternative routes are opened, it seems very difficult to bridge the gaps and achieve full utilization of our human resource potential.
- Gross enrolment ratio: The gross enrolment ratio for the primary classes has been hovering between 90 to 100% since 1990-91, but even then the literacy rate being only 64.8 % signifies that a large number of students drops out quite early, without even achieving literacy. A question arises as to how could they get enrolled in the first place if they had to drop out within a year or two or whether our pedagogy is so unattractive as to lose the interest of the young minds?
- Drop out rates: The drop out rates were 40.7%, 39.0%, 34.9% and 31.5% respectively in 2000-01, 2001-02, 2002-03 and 2003-04.

On the other hand, we have the following inherent strengths:

Large human resources of high intellectual caliber
Large number of expert faculty in almost every field
A growing middle class with high priority for education
A number of world class institutions of learning & research

Technological and Communication backbone to take their advantage in the field of knowledge empowerment of the mass of learners

13.9 Opportunities on the horizon

Falling cost of hardware
Falling cost of bandwidth
High growth in mobile density
Availability of EduSAT
Availability of infrastructure for narrowcasting using DD HPT &LPT
Rapidly expanding OFC network for broadband connectivity terrestrially
Advent of very low power consumption connectivity & computing devices
Abundance of knowledge on the internet
Rapidly expanding network of cyber kiosks and cyber café

Threats looming large:

1. Growing knowledge divide may soon endanger the fabric of social harmony
2. Other countries, managing their educational infrastructure well, may provide initial lead to their children which might get multiplied as the time progress.

3. If delayed, other countries may wrest the IT based initiatives from us

Keeping this balance sheet of SWOT in mind, and in order to address all these issues, a National Mission needs to be mounted to provide help to all the learners in the country, irrespective of their academic or age backgrounds. The components of this mission should be:

13.10 SOFTWARE SIDE

1. Development of an Education Help line – a One Stop Education Portal to take care of all the needs of the entire learning community, be they students or lifelong learners extensively utilizing e-Learning concepts and the ICT based methodology.
2. Pedagogical research to achieve most effective learning for disparate groups of learners.
3. Development of learning objects to facilitate clarity of concepts and deeper understanding of the subject matter.
4. Personalized packaging of knowledge modules and learning modules to suit different styles of learning.
5. Assembly of content for all levels and all subjects and skills.
6. Multi- lingual content development for the learners more comfortable in those languages.
7. Development of intelligent navigational techniques to directly access the relevant material on the web.

8. Voice support for educational material delivery and interactivity for the content on the portal.
9. Development of interfaces for other cognitive faculties.
10. Legal framework for testing and certification and various other educational interventions.
11. Conversion of educational tapes into SCORM compliant indexed video.
12. Launching a national movement for content and question generation.
13. Development of GIS based resource inventory as a knowledge base (for all subjects and skills) for educational and planning purposes.
14. Improving teachers' training and course curriculum.
15. Providing Digital / Information Literacy as well as literacy through digital means to every Indian
16. Acting as a clearinghouse cum rating agency for various web based learning contents for guiding Indian learners.
17. Emerge as a credible rating institution for knowledge content available on the Internet utilizing the large expert base, which would get collaboratively, networked through one of the sub Missions of this National Mission.
18. Preparation of metadata and timed index preparation for educational video / audio content on tape or other media.
19. Credit based flexible module formulation for openness to qualifications and easy transfer of credits from one programme / course to another.
20. Scholarship / Talentship management including identification, nurturing and disbursement electronically.

13.11 HARDWARE SIDE:

1. Development of robust models of networking to encourage community participation at local levels.

1. Content delivery through EduSAT and narrowcasting of TV signals.
2. Development of DTH platform for EduSAT and cheaper equipments for two-way connectivity through satellites.
3. Providing robust ICT infrastructure in every school for technology assisted learning.
4. Setting up virtual labs and lab centers and finishing schools for quality enhancement.
5. Development of cheap access devices to make them available to every individual.
6. Making broadband available to every individual.
7. Developing foolproof identification systems for learners and examiners and also developing model-testing centers to test the learners under controlled environment.
8. Developing very low cost, low power consuming wireless mesh [IEEE 802.11 standard] or point to point long range communication [IEEE 802.16 standard] capable robust video servers to act as communication and computational hubs at educational institutions.

The first step in this direction has already been taken with the initiation of a pilot project for proof of concept of the One Stop Educational Portal (called : SAKSHAT).

The efforts of MHRD are geared towards creating an open house for knowledge. The approach is to scrupulously avoid re-inventing the wheel. What is being attempted is harnessing a large number of knowledge resources in a manner that adds value to them by making them more personalized and useful to the lifelong learner / student. The effort also involves content packaging and integration to suit specific needs of the students at various levels and talents / mental prowess. The project is being implemented with the collaborative efforts of a large number of institutions, learned experts, MNCs and private players in the field of education / content providers.

The short-term goals that are being pursued to provide valuable insight into various challenges and at the same time establishing the proof of concept on a pilot scale have been identified as the following:

Every examinee at CBSE examination should automatically be provided an e-mail account and a personal profile enabling him / her to access the system. Later, this facility should be expanded to cover all examinees at various levels of public examinations.

There should be no need for any talented student to apply for a scholarship. Govt. should approach such talents with the offer of scholarship.

Crediting of scholarship amount should be done monthly, directly into the account of the student by electronic transfer of funds.

Such scholars should be treated as a “National Resource” and their talent should, therefore, be nurtured using e-learning and e-evaluation tools including safeguards to avoid random answering by the respondents.

Every scholar should be tested appropriately every month with a view to tracking his progress and guiding / helping him properly. This evaluation should be linked to the release of scholarship amount for that month. This process of evaluation and two way feedback should also be utilized for keeping a tab on quality issues of teachers / infrastructure / institutions with a view to improving them where needed.

Competency testing and certification for various types of skills or knowledge at any level.

Development of credit based learning modules for various levels of attainment and certification for formal levels of qualification based on a basket of credits in relevant subjects.

E-mail based communication of various opportunities, career guidance and links to relevant knowledge resources of levels determined by individual profiles and the levels determined by the system for a fast paced learning.

Developing an adaptable and scalable modular system for continuously adding the knowledge content with intuitively designed interfaces

The system should be such that 90% of the work load is taken by the Computers and only 10% remains for human intervention.

For the Proof of Concept level, the facility should be made available for 100,000 students of plus two and 1st year of professional or graduation levels, including 5000 scholars in the Delhi Region. Ultimately, the system is to be planned for nearly 50 crore users spread even in the remotest corner of the Country and a capability of handling nearly 10 million simultaneous web sessions.

This portal boldly seeks to address many of the shortcomings in our education system by bringing together the best experts in the country in the respective fields and best available knowledge resources on the web in the open domain. It seeks to standardize the curriculum and learning materials across the country and keep them in tune with the latest trends world over so that Indian learners do not lag behind. Teacher independent modules may work wonders in remote areas where the learner does not have access to good quality teachers or wants to study independently. The legal framework for the profiles maintained for individual learners and using these profiles as inputs in testing and certification is expected to remove the lacunae of the current system of testing which is mostly based on the performance recorded on the date of examination. A student not feeling well on the date of examination stands to lose heavily in the present system, but if this flexible system is adopted, the test of real potential and attainment would be possible. Another major activity would be to device a comprehensive system of credit based courses and linking certification with a basket of credits collected in core and elective subjects so that the system of obtaining certificates / degrees becomes flexible and one could appear at examination when one was prepared for it. A similar system of continuing competition could be evolved so that a student consistently performs well over a period of time to get through the competitive examination rather than doing well on one single day. The focus may then shift from cramming or peaking for a day to learning and excelling throughout the learning life. Such a system coupled with due rewards and encouragements can not only lay strong foundations for future learning but also bridge the gap between products of Indian universities and top level researchers in the world. When all the learning resources are available to a learner and degree certificates of very high credibility and repute are available through such a system, this may cater to the aspirations of a large number of

high aiming learners and thus, may reduce some pressure on the institutions of higher learning imparting conventional learning. Such a system could also enable a lot of community learning and formation of groups of learners of a given calibre set from diverse fields to enable fusion of best practices of one field of knowledge with those of the other. It may also galvanise rural communities who may share their problems with each other and find solutions from the locally available knowledge and talent. In case, solutions to problems being faced by a community are not forthcoming within a geographic locale, the horizon could be expanded as the internet enables expansion of the community boundaries to include even the entire world.

The content Advisory committee would identify the existing content and evaluate it for quality. If required, it is proposed to enter into an Memorandum of Understanding with third party content providers. It is also proposed to provide link to the existing content online after obtaining the IPR clearance. There will be a committee of experts-instructors, subject experts and instructional designers who would perform a needs analysis to determine the learning objectives required to make the targeted audience competent in the relevant subject. This group would also include curriculum developers who would consider the target consumers and then specifically define content required for them. The content will be constantly assessing and updated based on the feed back received from all the stake holders.

Regarding learning / teaching methodology, NCTE is to be involved. For curriculum framework and standards setting, NCERT would be contributing its inputs for the school level where as UGC, AICTE and AIU would be providing inputs for the higher levels of education. In this direction, the following initiatives are proposed:-

Setting standards for teacher education
Online quality assessment and refresher course
Planning of teacher training as per demand
Setting IT based curriculum
Design of syllabus as per current international standard and making the changes dynamically and making it available through Web based interfaces.

13.12 BENEFITS ENVISAGED:

Some of the benefits of e-Learning that are possible to be visualized even at this initial stage are discussed below:

13.13 Cost Effectiveness of Approach

Under the conventional system, the cost of providing teachers in remote and inaccessible areas by way of their salaries and other emoluments and travel cost is very high. Institutions find it difficult to attract and retain good faculty. By moving portion of the learning online, the potential cost savings can be significant especially keeping in mind the vast fabric of Indian continent. The proposed portal project is cost effective in reaching out to those who are out of the formal system of education through providing connectivity on line. Also, in order to reduce the cost of producing new e-learning modules, content providers would be reusing and repurposing the content available across the web through collaboration with the existing content developers.

Enriched experience of learning: This project would overcome the barriers of availability of teachers, geographical access etc. Similarly, this project could provide vocational education more effectively to the school dropouts than the conventional system of education due to its reach which is far more effective. The contents hosted on this portal would be both teacher enabled as well as teacher independent. The contents would also be an empowering tool for the teachers of all disciplines and all classes. They would enrich the school experience and mentor a learner in a personalized manner for the stand-alone learners.

13.14 Access/suitability

Instructors led education poses timing, geographical and availability constraints that restrict access to learning. E-learning scales to make valuable knowledge available to hundreds and thousands of learners simultaneously and at their convenience. E-learning also enables better leverage on global resources, utilizing subject matter experts around the world.

13.15 Timeliness

As opposed to the conventional instructor led learning, where enormous time and effort goes into content preparation, still rendering it ineffective in reach, e-learning can be as simple as providing a video-on-demand to anyone who immediately needs to know something to improve his performance. E-learning, by providing a new set of tools, adds value to all the traditional learning modes-classroom experience, text book study, computer based study.

13.16 Relevance

It is difficult to make all aspects of an instructor led learning course relevant for all learners, since every learner enters a class with a different baseline of knowledge. E-learning addresses this issue in two ways: by letting learners select only the information they need and by providing a prescribed learning target for the individual. On line pre-assessments will indicate the learning opportunity most relevant to each learner.

13.17 Accountability

Aside, from certification, it is difficult to hold learners accountable for what they have learned or to hold instructional designers and instructors accountable for the effectiveness of their offerings. E-learning tracks learner progress with Post-assessment online.

13.18 Community Participation

With the avenues of interaction between various haves and have-nots of knowledge in the community, many problems of the community will get solved by the community members themselves and thus, the body of knowledge available on the portal will also get enriched. A silent digital revolution aimed at upliftment of our rural masses is expected to ensue. Needless to say that the contributions, par excellence, made to the pool of knowledge by individuals will not go unrewarded.

13.19 Human Resource Database

By ensuring a system of continuous updating of profiles of learners, teachers, institutions, test questions and the knowledge modules, this portal is expected to bring about a qualitative change in the paradigm of learning and talent nurturing. It will also emerge as a massive database facilitating matching of talent with their requirement elsewhere, providing opportunity for placing right talent at the right place at the right time for the right value and recognition.

13.20 Finishing Touches to Quality

Over a period of time, as the portal evolves, it will also act as a value and quality of education enhancement tool for students not able to get admission to the highest portals of learning.

13.21 APPROACH TO SOLUTION:

The attitude of reinventing the wheel is to be scrupulously avoided if a system of this magnitude is to be put in place. The approach should be to get

whatever has already been developed – by entering into MOUs with the concerned IPR holders, and then further build the system to add value for achieving the desired goals. It will also be necessary to design the portal in such a way that it sustains the interest of the learner and at the end of every web session, the learner logs out with the satisfaction of adding to his knowledge in a way that he / she wanted.

13.22 EXISTING RESOURCES:

Fortunately, in this area, so much work has already been done that it should be possible to collect those fragments and then build the system very fast. Almost all the Institutions of repute have hosted their web sites – many of them quite informative and interactive too. A large number of software companies have also floated their products in the field of knowledge or testing and certification. Sites catering to the requirements of the school students have also sprung up. Large ICT sector companies are having their knowledge banks and evaluation systems quite often catering to the needs of the student community. Harnessing them and integrating into the overall concept of this portal can provide a spring board for accelerated development of this system. Seeking collaboration with various research labs and utilizing the available infrastructure in the country should also be tried. Work being done in this area by various IITs and other technical institutions should also be integrated seamlessly to achieve synergy. It is with this aim in mind that some of the IITs, multinational IT companies and the Ministry of Information Technology have been involved in the process of consultation. The National Project on Technology Enhanced Learning (NPTEL) is nearing completion and it would be generating a vast pool of learning modules for various branches of Engineering / Technology. These resources would also be delivered through this portal.

13.23 TEAM BUILDING & INSTITUTIONAL SUPPORT REQUIREMENT:

This being a truly multi disciplinary effort, its success will entirely depend on good teams in technological and knowledge content areas. For the technological part, NIC and its various collaborators will have to come forward as a strong and committed team whereas for the knowledge content part, various institutions under the MHRD will have to rise to the occasion. So far, institutions like CBSE, KVS, NVS, NIOS, IGNOU, AICTE and NCERT have been actively participating while UGC has been reluctant. In an endeavour of this magnitude, a directive will have to be issued to all the Institutions of repute to wholeheartedly collaborate in this effort. A blue print for the structure of the teams is at Annexure-I.

13.24 FINANCIAL REQUIREMENTS FOR THE PILOT PHASE: For implementing the “Proof of Concept “ stage, NIC has estimated an expenditure of Rs. 4.95 crore, which has been provided in the budget of the department of Higher Education, Ministry of Human Resource Development through re-appropriation. This includes cost of hardware, system software and development of various application software and content generation. Application software once developed will not form part of recurring cost while scaling up the model.

13.25 PROGRESS UPDATE: In implementing this project, a major collaborator has been the Indian Institute of Science, Bangalore. Other major owners of this project have been IGNOU, NIOS, KVS, NVS, NCERT, CBSE, AICTE etc. The concept has been established. A temporary web site has been created by the NIC to make available various components of this portal to students of Kendriya Vidyalaya in Delhi. Quite a few chapters have been prepared based on the NCERT syllabus for class XI and XII. The presentation style of the learning materials is in four quadrants – one quadrant contains the NCERT text book with hyperlinks for words and concepts needing elaboration / clarification; the other quadrant contains the video lectures / clippings / animations / simulations etc. with multimedia graphics and voice; the other quadrant contains selected links to freely available related materials on the internet to provide more depth of knowledge and the last quadrant contains quiz, FAQ etc. for testing the concepts learnt. A student could switch from one resource to the other easily and depending upon his / her requirement and desired depth, could choose learning modules best suited to the individual needs. The portal also seeks to deliver the content in a personalized manner and maintain a profile of the student for this purpose.

13.26 CONNECTIVITY AND BANDWIDTH ISSUES:

An integrated model for connectivity based on satellite, terrestrial (OFC / Copper), wireless would need to be developed for connecting every educational institution to begin with and then to every Indian subsequently. The bandwidth provisioning would have to be considered as an educational infrastructure and bandwidth for educational purposes would have to be made free from the user point of view.

In nutshell, the above said portal is an initiative proposed for developing an online learning platform for learners, teachers and developers to actively participate in interactive multi media course content development. The effort is targeted at making rich and accessible educational content available to learners from all walks of life and across all disciplines on a single portal. The platform is also aimed at enabling sharing of academic resources being developed by teachers and developers across the country so that a dynamic and valuable repository of material is created across disciplines by academics or other resource persons working anywhere in the ODL system. A total allocation of 5000 crore is proposed to be kept for this initiative as a whole in the 11th Plan.

13.27 Development of Content and Content Up-gradation

One of the greatest challenges in the fast moving world of the knowledge era is the development of high quality content and maintenance of the relevance and timelessness of content. While significant amount of material in print and other media has been developed by the ODLS, new emerging discipline of media

studies, design, insurance, actual science, biotechnology, environment studies, consumer protection, cyber laws and legal education would require significant inputs to be made for content development. Up-gradation of content is also an issue worthy of consideration for the ODLS, which would require financial outlay in the next Plan.

13.28 National Centre for Recognition and Development of Skills

Recognition and development of employable vocational skills has been a relatively neglected area in higher education. A small beginning was made at IGNOU through an initiative in recognition of prior learning in masonry skills and that of construction workers in the Indian army so as to enable and certify their further training. In order to provide a focused impetus to identification, recognition and certification of vocational skills as well as for accreditation of experiential learning, it is proposed to set up a National Centre for Recognition of Skills. The centre will spearhead and coordinate efforts in the ODL system to identify priorities in skills development in response to the national requirements in various sectors, generate mechanisms to accredit experiential learning in these domains, and offer programmes for development and certification of these skills.

13.29 National Centre for Development of Human Capital

The ODL system has been providing training and development support for the requirements of Human Resource Development arising out of various projects of the Govt. of India in different sectors of infrastructure growth. These training initiatives by IGNOU, as of now, are undertaken by project teams drawn from various units which are later disbanded. To institutionalize the training effort as a single unit and to build up a sustained experiential pool of these developmental initiatives it is proposed to set up a National Centre for Human Capital Development, which shall function as a central resource centre for focused and customized training efforts required from time to time for national development projects.

Most of the learning material developed is in the form of well-structured print material supported by Audio/Video material. Looking at the fast developing world of knowledge generation, it would be timely to disaggregate the content theme-wise, in a dynamic repository of reusable learning objects, so that academics can exercise greater selectivity and focus in design and development of target based learning packages. This would involve application of blended learning methodologies. During the Eleventh Plan, the ODL System should actively engage itself in development of National Repository of RLOs.

13.30 Innovation and R & D

The ODL System has been able to attain efficiency of skills and faster growth rate on account of the constant search for news and application of innovations whether in content development or the learner support system. To nurture and foster the sprit of innovation, the IGNOU has setup a National Centre for Innovation in Distance Education which is dedicated to the documentation, identification and application of innovations in all sphere of DE activities. Based on feed-forward research on emerging needs of the learners, ODL System needs to constantly search for innovative solution for cost efficient, high quality education provision to the vast multitudes of the learners. It is proposed that financial allocation be provided for innovation, research and development in the ODL System.

13.31 Development/Acquisition of online platform, LMS/Mobile based technologies

The nation has witnessed an impressive emergence of various technologies, broadening the choice available to provide to all, education in terms of delivery and access. These include development of fiber optics, mobile networks, satellite based interactive technology etc.

Over the period of time, on account of the impressive cost economy that usage of such interactive technology brings about, as well as the possibility of mass customization of educational offers to the diverse learners group, ODLS is at a stage where planned shift from face-to-face based learner support to technology aided and interactive learner support should be initiated. It is, therefore, imperative for the University to develop its online learning platform support by a learning management system and augment it by mobile learning technologies. The development of such technology and their application needs to be supported. Additional resources, will also be required for capacity building and HRD efforts as well as for quality assurance across the system.

13.32 Special measures for the disadvantaged groups

Continuing its efforts to reach out to the disadvantaged sections of the society, the open and distance learning system proposes to extend the network of its study centers and regional centers to the disendowed Regions, and the marginalized sections of the society. A total of 6/6 Regional/ Sub Regional Centers is proposed to be activated during the eleventh plan necessitating additional outlays.

A National Center for the Differently-abled has been set up during the Tenth Plan. It is proposed to develop special programs for the visually challenged, physically challenged and hearing impaired learners, both in the vocational and general education streams during the Eleventh Plan. Provision has to be made for acquisition of software and appropriate hardware to enable the development of specialized education programs, supported by appropriate technology enabled delivery mechanisms as well as face to face Learner support mechanisms.

13.33 Distance Education Council

The entire spectrum of open and distance learning has seen a transformation in the light of advancement in Information and Communication Technology (ICT). This has thrown challenges as also provided new opportunities for the learners through distance mode of education. The time demand for the optimal use of ICT by the universities to offer their distance education programme cutting across the territorial jurisdiction. India may also make available her experiences in Distance Education to other countries. Moreover, there is also a need to introduce a mechanism to certify the skills of people acquired through the non-conventional and non-formal means. For the purpose, present set up of coordinating and maintaining the standards of distance education needs to be strengthened by focusing more on promoting the use of technology in distance mode of education and certification rather than focusing on regulatory mechanism. There is a need for establishment of an independent statutory body, through, legislation, perhaps, in the name of Distance Education Council, to promote, coordinate, determine, maintain and regulate the standards of education in the open and distance education system in the new circumstances as also to promote Indian education abroad through distance mode. Needless to mention that the parliamentary Standing Committee on Ministry of Human Resource Development had also recommended for establishment of Distance Education Council as a separate independent statutory authority. In view of this, it is proposed to set up a statutory authority, in the name of Distance Education Council (DEC) for taking all necessary steps to promote and facilitate distance education utilizing all possible modes and making best use of technology, and to establish a mechanism for certifying the skills of the persons acquired through non-conventional and non-formal methods, as also to prescribe and determine and maintain the standards in distance education, and a provision of Rs. 700.00 crore may be made for DEC in the ensuing 11th Plan.

13.34 Inter university consortium

Set up in the tenth plan, the consortium has provided a lead to the development of multimedia content through active training initiatives across the ODL System. The consortiums needs to be extended in terms of its scope to cover and support all state open universities as well as CCIs. A funding support of Rs. 50.00 crore is proposed in the Eleventh plan.

13.35 Setting up of State open universities, Support to existing SOUs And CCIs

At the end of the Tenth Plan a total of thirteen State Open Universities would be functional. These include the universities in the States of Andhra Pradesh, Maharashtra, Rajasthan, Karnataka, Madhya Pradesh, Uttar Pradesh, West Bengal, Bihar, Gujarat, Tamil Nadu, Uttranchal, Chhattisgarh and Assam.

The setting up of 8 more State Open Universities is envisaged under the Eleventh Plan. In addition, another 100 CCIs are proposed to be supported in their quality up-gradation efforts through DEC Initiatives.

13.36 IGNOU Infrastructure

The focus shall be on the construction of buildings for three new centres set-up under the Xth Plan, setting up two new schools (School of Media Studies & School of Design), initiating new disciplines (Insurance, Acturial Sciences, Bio-informatic, Entrepreneurship Studies and Teacher Education). Systemic Research with both national and international organisations would receive significant emphasis during this period.

The expansion of IGNOU's Student Support Service Network in smaller states, areas with low literacy, and therefore requiring special developmental attention, will be carried forward. Additional Regional Centres may be planed in Western Rajasthan, Nagpur, Uttaranchal, etc. The Study Centre Network needs to be extended to achieve block level penetration.

In smaller, dispersed locations where a physical Study Centre may not be viable, a network of mentors would need to be created.

A total of 1500 credits worth of developmental work in respect of the existing and the newly proposed discipline is envisaged during the 11th Plan necessitating an additional employment of 45 academic faculty at various levels.

Building for the three newly established centres under X Plan and the two centres proposed to be set up under the XI Plan are also proposed under the XI Plan.

13.37 Educational Development in the North East and Other Backward Regions

On going activities of development of learner support centres, satellite interactive terminals, media centres will be extended to yet unreached areas in the North East. An additional initiative of Edusat based training was initiated in August, 2006 and would be extended to cover several aspects of vocational education in the North-East Region. A total outlay of 10 per cent of overall plan budget, as per the Govt. directives is kept for the North-East Region.

Chapter - 15

NEED FOR ASSISTANCE TO POOR STUDENTS TO PURSUE HIGHER EDUCATION

There are large numbers of students who are not in a position to pursue higher studies due to lack of resources. The Government should provide some avenues to enable them to mitigate their financial problems.

The Parliamentary Standing Committee in its 172nd Report has recommended that setting up of an Educational Development Bank of India as suggested from time to time for helping financially poor and needy students should be considered urgently.

In order to provide student loan on low interest rate for pursuing higher education, it is proposed to set up Higher Educational Refinance Corporation, which may be given a fund of Rs.2, 500 crores during XI Five Year Plan.

Chapter-16

Financial Requirement

Considering the proposals discussed in this Report, and taking into account the constraint in resources, the financial requirements for implementation of the recommendations :-

1. Schemes to be funded through the University Grants Commission

Sl No	*Scheme*	*Rate*	*Amount Rs. In crores.*	*Remarks.*
A	**Enhancing Access**			
1	Upgrading State Universities to the level of Central Universities	20 Universities @ Rs.20 Crores/ University/ year	2000.00	One State University in each state to be funded at the level of Central University.
2	Deemed Universities	25 Universities @Rs.5 crores/University	125.00	To each old deemed universities.
3	Strengthening infrastructure of existing State Universities	164 Universities @ Rs.10 crores / University	1640.00	
4	New State Universities	150 Universities @Rs.10 crore/ University	1500.00	
5	Strengthening infrastructure of existing Colleges	6000 Colleges @ Rs. Crore / College	6000.00	
6	New Colleges	6000 Colleges @ Rs.1 Crore	6000.00	
B	**Special Development Grants to:**			
7	New Departments/Faculties/ Centres	100 Departments @ Rs.5 crores/ Department	500.00	For faculty positions, infrastructure & research to help them effectively compete with premier institutions.
8	Faculties of Medical Studies in All Central Universities of North Eastern Region	All Central Universities in North â€“ Eastern Region.750.00		
9	Commemorate Higher Education in Mumbai Kolkata & Madras Universities.	Universities @ Rs.100 crore/ University	300.00	For rejuvenation of infrastructure
10	5 State Technological Universities	5 Universities @ Rs.100 crores/ Universities	500.00	For infrastructure development.

Sl No	*Scheme*	*Rate*	*Amount Rs. In crores.*	*Remarks.*
11	Sports facilities in Universities	All Universities and Colleges	200.00	New Scheme
C	**Promoting Inclusiveness and Equity**			
	Gender Equity:			
12	Women Hostel in Universities	250 Universities @ Rs.1.00 crore/ University	250.00	
13	Women Hostel for Colleges	3000 Colleges @ crore/ College	3000.00	
D.	**Social Group Equity**			
	(i)Special Development Grants to:			
14	Universities with relatively higher proportion of SC/ST/ Minorities	20 Universities @ Rs.10 lakh/ Universities per annum	10.00	
15	Colleges with relatively higher proportion of SC/ST/Minorities	500 Colleges @ Rs.5 lakh/ College per annum	125.00	
E.	**Grant for Hostels**			
16	Universities with relatively higher proportion of SC/ST/Minorities/ Poor students in hostels	20 Universities @ Rs.10 lakh /Universities per annum	10.00	
17	Colleges with relatively higher proportion of SC/ST/Minorities/Poor students hostel.	500 Colleges @ Rs.5 lakh/ College per annum	125.00	
18	**Â© Development of Community Colleges (ii) Special Grants for Capacity Building Initiative for SC/ST/OBC Minorities to:**	500 colleges @Rs 25 Lakh per college	125.00	
19	Schemes for persons with Disabilities		500.00	Infrastructure Development, Teaching aids, fellowships etc
20	Schemes for promotion of Higher Education to minorities		500.00	Fellowships, Projects Development and other assistance.
F.	**Regional Equity Special Development assistance to:**			

Sl No	*Scheme*	*Rate*	*Amount Rs. In crores.*	*Remarks.*
21	Universities in Backward Areas	50 Universities @ Rs.1 crore /University	50.00	
22	Colleges in Backward Areas	1000 Colleges @ Rs.50 lakh/College	500.00	
23	Colleges in Rural Areas	1000 Colleges @ Rs.10 lakh /College per annum	500.00	
24	Universities in emote areas (excluding Central University)	25 Universities @ Rs.10 lakh /College per annum	500.00	
25	Universitiesin Small Towns	50 Universities @ Rs.10 lakh/ University per annum	250.00	
26	Collegses in Small Towns	500 Colleges @ Rs.10 lakh /college	250.00	
27	To provide assistance for setting up B.Ed. Faculty in College/ Universities of each District Headquarters.	New Scheme	150.00	Over a period of time due to under-investment in higher education. These allocations are made with the commitment that a similar sum (plus allowance for inflation) would be made in the XII Plan as well.
G.	**Mitigation of Quality Gaps in Colleges**			
28	Fulfilment of Quality Gaps	Assuming 50% covered in XI Plan and 40% as Central Plan.	5584.47	
29	Faculty improvement programme (FIP)	@ Rs.12 lakh/teacher for 2000 teachers	240.00	
30	Catch up grants to young colleges	500 colleges @ Rs 50 lakh	250.00	
31	Rejuvenation of infrastructure in old colleges	500 colleges @ Rs 50 Lakh	250.00	
32	Autonomous colleges	@Rs 1 Crore/college (400 colleges)	250.00	

Sl No	*Scheme*	*Rate*	*Amount Rs. In crores.*	*Remarks.*
33	New Autonomous colleges	@Rs 1 Crore/college (400 colleges)	400.00	
34	Universities with potential for excellence	10 Universities @ Rs 30 Crores/university + 9 old university @Rs 10 Crore	390.00	
35	Colleges with potential for Excellence	@ Rs 1 Crores/colleges (100 New Colleges + @Rs. 40 Lakh for 97 Old Colleges)	138.80	
36	Implementation of the recommendation of the Empowered Committee in basic Scientific Research	250 Universities	3000.00	MM Sharma Committee recommendation @ Rs. 600.00 crores aer annum New Scheme
37	Exchange of junior faculty to institutions of Eminence	500 Teachers @ Rs 1 Lakh/teacher per annum	25.00	
38	Academic Staff College		250.00	Based on Sub-Group report
39	Establishment of Regional Institutes for Professional Development	Converting 5 Academic Staff Colleges (ASC) on experimental basis @Rs. 10 Crores/Institute	50.00	New Schemes
40	Fellowship for doing M.Phil./ Ph.d	30,000 Fellowships @Rs 1 Lakh p.a/ per fellow	1500.00	
41	Teaching Assistantship for Doctoral students (Non Fellowship)		150.00	New Scheme
42	Postdoctoral Fellowships	1000 Fellowship @ Rs 3 Lakh per fellow/pa	150.00	
43	NAAC		97.76	Based on the Sub-Group Report
H.	**Internal Quality Assurance Cells**			
44	Universities	150 Universities @Rs 5 Lakh/university	7.50	

Sl No	*Scheme*	*Rate*	*Amount Rs. In crores.*	*Remarks.*
45	Colleges	4000 Colleges @Rs 2 Lakh/college	80.00	
46	Establishment of New IUCs	5 New IUCs @ Rs.200 crores.	1000.00	(a) Linguistics; (b) Higher Education Research - for Policy & Planning Â© Life Sciences (d) Humanities & Social Sciences (e) Rural Higher Education.
I.	**ICT Integration**			
	Digital Repository			
47	(a) Universities		250.00	**Based on Sub-Group report.**
48	(b) colleges		1080.00	
49	ICT for Universities & Colleges		150.00	**Based on X plan report**
50	Special Assistance to ten Premier Universities (a) One-time grant (b) Recurring grant (average 10 Science departments per university) for five years (i) Research (@Rs. 10 Lakh p.a) (ii) Teaching (@Rs.10 lakh p.a.)	2000 50.00 50.00	2,100.00	
51	Summer schools for undergraduate and postgraduate students	30.00	30.00	

Total Rs. 43,033.53

2. Financial requirements for Open and Distance Learning

Rs. (Crores)

Part I : Gyan Darshan & Gyan Vani		
1. Digitalisation to be completed 2. Augmentation of Human Resources 2. Transmission cost (Recurring Cost) 3. Software development 4. Gyan Vani Station (15 station to be established) 5. 55 Stations Maintenance Cost (recurring cost) 6. Software development	10 06 20 10 22.5 110 7.5	**186**
1. N-Node 2. Edusat Network 3.National Resource Centre and e-Resource (for Print and A/V Material) 4.Development of Content and Content upgradation 5. One Stop Education Portal 6. Innovation and R&D 7. Software- Adoption/adaptation of technology 8. Development/Acquisition of Online platform, LMS/Mobile based technologies 9. Capacity Building Training/HRD/QA	250 1000 25 50 5000 30 20 30 20	**6425**
Disadvantaged Group 1. Expansion of Educational Access (RC/SC) 2. Development of Prgrammes for Differently Abled 3. Specialized software/hardware	 15 15 10	**40**
DEC, SOUs & CCIs 1. DEC 2. 13 existing SOUs 2. 8 new SOUs 3. CCIs 4. Inter University Consortium 4. IGNOU Counsellor-Dedicated Virtual Training Network	 700 150 50 100 50 20	**1070**

IGNOU 1.New Disciplines/Schools (Media, Design, Insurance) 2.National Centre for Computation Application in Sciences 3.National Centre for Human Capital Development 4.National Centre for Employable Skills Development 5.Expansion of study/RD network (buildings, programme delivery) 6.Development of Mentor Network (10%) 7.Campus Development : Buildings for the 3 new Centres set up under the X Plan and 2 new Centres proposed above.	 35 20 30 20 100 20 30	 **255**
Development of North-East	93	**140**
		8116

3. Scheme for setting up of Higher Educational Refinance Corporation
(Central Sector Scheme)

The projected requirement is Rs.2, 500 crores during the XI Plan.

4. National Merit Scholarship Scheme

Increase in the rates and number of scholarships have been suggested in Chapter-14 of this Report.