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Directorate of Higher Education

Himachal Pradesh

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Dated: Shimla-171001 the 24.09.2015

From: - The Director of Higher Education
Himachal Pradesh

To
All the Principals,
Government Colleges, in Himachal Pradesh

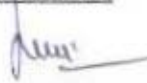
Subject: - Formulation of New Education Policy-Grass Root Level
Consultation thereof.

Memo:
The Government of India, Ministry of Human Resource development, Department of Higher Education, Shastri Bhawan, New-Delhi has started the process of "Formulation of New Education Policy" which was framed in 1986 and also was revised in 1992. A meeting was held by Hon'ble HRM with the State Education Ministers and Education Secretaries on 21.03.2015. Earlier, the Government of India, Ministry of Human Resource development, Department of Higher Education has decided that the grass root consultation process will be initiated at the Village level moving upwards to the Block, District and State Levels for themes of School Education.

In this connection, the Government of India, Ministry of Human Resource development, Department of Higher Education has framed 33 themes for the New Education Policy. Out of these 13 of the themes are concerned with the School Education and whereas, 20 themes are concerned with the Higher Education. Since, Government wants to involve all the stakeholders. You are, therefore, requested to organize a staff meeting of staff of your College in order to illicit their views concerning themes of Higher Education. Following which, you are requested to send the views sought from

the staff to the office of the undersigned latest by 29th September, 2015 to enable the Directorate to send the information to Government of India, Ministry of Human Resource development, as aggregated from various institutions. These orders may be implemented/obeyed in letter & spirit. If any Officer failed to obey the orders of higher authorities disciplinary proceedings will be initiated against his/her as warranted under CCS Rules.


KINDLY TREAT IT AS MOST URGENT


(Dr. B. L. Vinta)
Jt. Director of Higher Education
Himachal Pradesh

Endst. No. Even Dated: Shimla-171001 the 24.09.2015

Copy for information to:-

- 1 The Additional Chief Secretary (Education) to the Government of Himachal Pradesh, Shimla-2.
- 2 The Technical Officer (Computer/IT Cell), Directorate of Higher Education, Himachal Pradesh is hereby requested to upload the same on Departmental Website.
- 3 Guard file.


Jt. Director of Higher Education
Himachal Pradesh

List of themes for consultation on Higher Education

- I. Governance reforms for quality
- II. Ranking of institutions and accreditations
- III. Improving the quality of regulation
- IV. Pace setting roles of central institutions
- V. Improving State public universities
- VI. Integrating skill development in higher education
- VII. Promoting open and distance learning and online courses
- VIII. Opportunities for technology enabled learning
- IX. Addressing regional disparity
- X. Bridging gender and social gaps
- XI. Linking higher education to society
- XII. Developing the best teachers
- XIII. Sustaining student support systems
- XIV. Promote cultural integration through language
- XV. Meaningful partnership with the private sector
- XVI. Financing higher education
- XVII. Internationalization of higher education
- XVIII. Engagement with industry to link education to employability
- XIX. Promoting research and innovation
- XX. New knowledge

I: Governance Reforms for Quality

Quality assurance in higher education is today the top priority of the policy agenda. Post-secondary education needs to prepare graduates with new skills, a broad knowledge base and a wide range of competencies to enter a more complex and interdependent world. Quality is a multi-dimensional concept and several mechanisms for quality assurance and management at individual and institutional level are needed. Systems of accountability and accreditation with a robust regulatory mechanism are essential to the process of sustaining and improving quality. Coordination and determination of standards in institutions for higher education and research and scientific and technical institutions is a constitutional obligation of the central government. It is necessary to involve all stakeholders to institutionalize internal processes in favour of quality as an island of excellence cannot serve the massive requirement of higher education. Quality has to be the concern of all institutions and excellence will flow from good quality institutions and appropriate governance structures. Higher education (HE) in India has experienced an unprecedented expansion accompanied by diversification of the sector. The unplanned expansion of the sector poses challenges for enhancing and maintaining quality.

The country has established external quality assurance agencies in the 1990s to assure external quality. The National Assessment and Accreditation Council (NAAC) was set up by the UGC in 1994 to accredit universities and institutions of general higher education and the National Board of Accreditation (NBA) was established by the All India Council of Technical Education (AICTE) in 1994 to accredit programmes and institutions. NAAC accredits institutions and certifies for educational quality of the institution based on seven criteria. There is a dire need to undertake reforms in the entire higher education sector beginning with regulatory structures and going down to the institution level. Some of the possible approaches of reform agenda which could be considered are:

- Create independent quality assurance frameworks to address the quality deficit in the higher educational institutions. Setting up of an Internal Quality Assurance Cell (IQAC) is one such mechanism to ensure quality within the institutional framework and linking it with the standards set by the quality assurance agencies..
- A governance structure where in appointment of VC & Professors are through transparent and competitive process
- Restructuring the existing regulatory bodies and relook at their multiplicity in a rationalized manner.
- Autonomy matching with accountability: Need to re-align the regulatory functioning in such a way as to promote autonomy of institutions. This approach envisages that we embrace a paradigm shift from Facilitation rather than regulation; Single point clearances for grants and clearances; encourage global quality institutions. Autonomy of institutions would also be achieved by conferring degree granting powers to colleges and conferring autonomous status on colleges. In order to ensure horizontal and vertical mobility of students, we need to ensure that uniformity is achieved in terms of syllabi and curricula through a framework; Choice Based Credit System (CBCS) is adopted by all Institutions.
- Need to revisit the issue of multiplicity of entrance and eligibility examinations and explore the possibility of a single national test. Can we have a National Testing Service for this purpose, which could be developed through consultations and debate?
- Permitting foreign education providers in India for proper regulation and internationalization of education by enhanced collaborations.
- Norm based funding of higher education rather than subjective demand based inspection governed funding. UGC is the main vehicle of routing funds to central and state Universities and colleges for funding. Adopting a norm based funding approach could be considered for improving efficiency in grant disbursements.

- State universities and their affiliated colleges that account for more than 90 percent of the enrolment suffer from severe fund constraints and poor governance leading to poor quality.
- Autonomy for Central Educational Institutions
- Prevention and prohibition of unfair practices so as to ensure that only merit plays a role in admissions.
- Capitation fees and misleading advertisements to be punished severely.

Questions for discussion

- Which of the following reforms will create better governance structures in State Universities
 - Revamp the affiliating system
 - Ensure multi-stakeholder governing bodies
 - Clearly defined roles for various governing bodies
 - Greater accountability through transparency
 - Greater academic, administrative and financial autonomy
 - The ability of institutions to charge appropriate fees from students who can afford to pay and at the same time having a means blind system for the needy students
- Which of the following reforms will create better governance structures in Centrally Funded Institutions
 - Changes in the composition of governing bodies such as having representation from industry, alumni and civil society etc.
 - Re-align the regulatory functioning in a way so as to promote autonomy of institutions, with accountability fixed.
 - Single over-arching regulatory authority?
-)Is it desirable to shift towards norm based and outcome based funding of public funded higher education institutions? if not why and If yes, why?

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- o What can be done to empower IQAC for internal assessment and accreditation exercise?
- o What institutional measures need to be taken to attract, recruit and retain exceptionally qualified faculty and also keep the equity focus?
- o What should be done to teachers who do not teach ?
 - Remove transfer counseling
- o Would you support if they are removed?
- o Should the college Principal and the Governing body be given responsibility for expenditure, and be accountable for it.
- o Should the University Act be changed ?
- o Should VC's appointment be based on Search & Selection Committee ?
- o Should faculty appointment Committee have Third Party presence as Appraiser who is to just to watch and give report ?
- o Should fees be enhanced to Rs.500/- p.m. when the expenditure is more than Rs.2000/- per person. This should be come along with waiver for needy students.
- o Should BoG/Governing body be empowered to take decisions with regard to expenditure on the fee collected?
- o Should colleges be autonomous administratively and financially?
- o Should colleges be allowed to frame their course work (Accredited) within the NEP.
- o Should teachers have probation for 5 years ?

II: Ranking of Institutions and Accreditation

The global ranking of universities is based on an assessment of the institutional performance in the areas of research and teaching, reputation of faculty members, reputation among employers, resource availability, share of international students and activities etc. Most of the top ranking institutions are located in the USA and UK.

The Indian universities do not find a place in the top 200 positions in the global ranking of universities. Even the top ranking institutions of India appear low in the global rankings. As per the Times Higher Education Rankings 2012-13, the top ranked Indian institutions are IIT Kharagpur (234), IIT Bombay (258) and IIT Roorkee (267). The top ranked institutions as per the Quacquarelli Symonds (QS) System 2012 were IIT Delhi (212), IIT Bombay (227) and IIT Kanpur (278). Does it imply that India has only low quality higher institutions? The idea of establishing accreditation agencies in India was to enhance standards and quality of higher education.

As a measure of quality assurance India established accreditation agencies in 1994. The institutions of higher education were supposed to approach the accreditation agencies to get their institution or programme accredited. Accreditation was voluntary and as a result only few institutions have approached and accredited in India. Only 140 universities (out of the 164 recognized by the UGC) have got themselves accredited by the National Assessment and Accreditation Council (NAAC) and, among them; only 32 percent have rated as A grade or above.

Amongst the 4,870 colleges, as many as 2,780 are accredited by the NAAC and, among them, barely 9 percent are rated as A or above. Doubtless, quality and excellence in colleges leaves much to be desired. Among the accredited institutions, 68 percent of

the universities and 91 percent of the colleges are rated average or below average in terms of quality parameters specified by the NAAC.

The Indian higher education system has expanded and will further expand. This is in response to the increasing social demand for higher education. However, a major share of this expansion has taken place through the private institutions. The quality of facilities and teaching learning process in these institutions is far from satisfactory. An assessment and accreditation of institutions are important, especially in the context of mushrooming of private higher education institutions, to ensure quality in higher education.

There is need for effective ways and strategies to expedite the completion of assessment and accreditation by NAAC within a stipulated time frame. Now accreditation is made mandatory for higher education institutions to receive funding support from the UGC. While this is a positive development, the issue of accrediting large number of institutions within a short period of time poses challenges to the accreditation agencies. Some of the state governments, notably the State Councils of Higher Education, have established their own accreditation units. This is an important development to decentralize the accreditation process. The higher education institutions have also established internal quality assurance cells. Their functioning and effect on improving overall quality improvement of the institutions is yet to be assessed. The issues related to ranking and accreditation raises several issues for discussions.

Questions for discussion

- Should India focus its resources on research universities, including liberal arts and social sciences so as to improve the country's position in the global rankings?

- Should not India develop its own ranking system relying on indicators more suitable to Indian situation as other ranking systems have heavy weightage for perception/subjective factors in which Indian Universities lose out.
- Accreditation has been made mandatory for all institutions (whether the institution is publicly funded or not)? Is this approach correct or not?
- How should we facilitate the process of accreditation to make the process more objectively verifiable and transparent?
- Should we focus on programme accreditation or institutional accreditation or both?

III: Improving the quality of regulation

The main objective of regulation in higher education is to meet the three objectives of equity, expansion and excellence as stated in the Twelfth Five Year Plan. There is a multiplicity of regulators in India and there are separate regulators for higher education, technical education and professional education. However it is felt that a single regulatory body would be more effective as it is often the implementation of the regulations rather than the regulations themselves which poses the problem.

The issue of quality of governance is closely related to the issue of autonomy enjoyed by the institutions. Starting from the first Commission on higher education (Radhakrishnan Commission in 1948) there has a strong argument for granting of more autonomy and less interference from the government in the governance and management of universities. Commissions on higher education emphasized on the legislative framework of the universities and a strong governing body with external members leaving the universities 'free from interference'. Universities were supposed to be self-regulating entities and to voluntarily adhere to standards determined by the UGC.

There is a need to enable institutional autonomy by transforming the role of government from command and control to an evaluative and steering role. In this scenario there is a need to increase the capacity of the higher education system to govern itself by coordinated regulatory reforms. However regulation is needed in some areas in the higher education sector: granting permission to enter, permission to operate-decide on the intake of students and introduction of courses, monitoring its overall performance including issues related to governance and management and levels of student learning. Also more transparency is needed in both public and private institutions by requiring them to disclose important standardized information related to admissions, fees, faculty, programs, placements, governance, finance, business tie-ups and ownership.

As we move from an elitist structure to massification we have the proliferation of private higher education institutions. Some of these universities and colleges lack proper infrastructure and faculty strength and have poor academic standards and take exorbitant fees from students. However measures need to be introduced to ensure that private institutions are committed to quality, equity and transparency through regulatory reforms. The current regulatory framework needs to be reframed to: (i) encourage serious private philanthropy and investment to innovate and provide high-quality education; (ii) promote better availability of information on private institutions to the public; (iii) ensure that institutions that indulge in unfair practices are dealt with swiftly. The system of accreditation will be central to such reforms and needs to be transparent and function in a time bound manner.

There have been cases like the judgment in 2005 in Chhattisgarh ordered closing down of 117 private universities as they did not follow the regulations stipulated by UGC in 2003. Recently 41 deemed universities had their deemed status withdrawn after a physical inspection found them lacking in infrastructure facilities which are needed to provide quality education.

There is also a need to reform the affiliating system since majority of the teaching takes place in affiliated colleges. Institutional reforms are needed whereby affiliating universities will be required to revamp their college development councils and give greater autonomy to their colleges in all academic, administrative and financial matters.

Questions for discussions

- Has the present system of regulation stifled the growth of our institutions? Would it be better to reduce the number of regulatory bodies and/or should they undergo massive restructuring so as to function effectively. Please examine in detail.
- How do we ensure accountability measures while granting autonomy to institutions of higher education?
- Are the existing regulations sufficient and how to enforce regulations?

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- How autonomous should the regulatory bodies?
- Should Inspectorate function be discharged by accreditors?
- Should systems be put online for accreditation and videographic evidence be accumulated by regular for ascertaining what ranking to be given to which institution?
- What are the anomalies/challenges thrown to education sector by private sector which converts education into a profit making enterprise at the cost of students and academics?

IV: Pace Setting Roles of Central Institutions

Central institutions/universities are regarded as key institutions in the processes of social change and development. The most explicit role they need to play is in research and in the production of highly skilled personnel to meet requirements of the production sector. This crucial role should not keep them away from their role in the building of new institutions of civil society, encouraging and facilitating new cultural values and training and socializing new social elites.

Central universities are institutions to be durable and enduring. They need to be wisely designed, governed and financed to remain our global image and national competitiveness. These institutions have responsibility to transcend traditional disciplinary limitation in pursuit of the intellectual fusion and develop a culture of academic enterprise and knowledge entrepreneurship. They must also be prepared to begin delivering higher education at scale in a manner that bestows status upon universities based upon the outcomes they achieve and their breadth of impact rather than the exclusivity and quality of their incoming freshman class.

Central universities must play a role of academic incubators which will nurture and produce the young budding academicians and scientists of line which are in much of demand. Academic incubation centers should be opened by central universities in their own catchment /region at three different levels: a) Junior academic incubators; b) Senior Academic incubators; and c) Higher Academic incubators. Junior, senior and high academic incubators will be responsible for excelling the knowledge and research oriented aptitude in the students of first to eighth standard, ninth to twelfth standard and UG/PG standards respectively.

Central universities of the country may be given specified targets to be achieved within the framework of national priorities for research and teaching to develop experts to help facilitate regional development in the country. Similarly, the central university

professors must be given task to teach students at junior and intermediate level once a week / fortnight to enthuse them to serious academic work.

Questions for discussion

- How the Central universities will be able to play a pace setting role?
- What steps need to be taken to transform these institutions into centres of excellence?
- How to promote autonomy and institutional level initiatives to support regional level development efforts?
- How can CFI's do hand holding for educational institutions in and around their local areas?
- Suggest ways how CFI's can help to promote and spread academic excellence?
- Suggest ways of how CFI's can help HE in State sector?
- Should Central institutions be connected with community and schools close by to improve the quality of their life.
- Should their work and quality of teaching and research be connected to community?
- How do we set performance standards for CFI to ensure financial probity and administrative and academic excellence?
- How can we increase the GER in Central Universities from the current level of 2% to 10%?

V: Improving Public State universities

There have been debates and discussions on the state public higher education system within the country and recognition of the dire need to change, restructure and reform them. The issues range from the appointment of Vice Chancellors in the state public universities, to those of affiliating system and the governance. There is heavy bureaucratization in the universities. There is severe shortage of teachers and teachers appointed on ad hoc positions are ill equipped to manage teaching and research on paltry payments to them. The universities are not autonomous in their decision making. The regulations and all academic reform agenda imposed on the state public universities are either burdensome or are not monitored properly. There is a system of accreditation of universities and colleges to improve quality, yet the public higher education has not much responded to it.

The state public universities suffer from severe public resource crunch and this has led to the proliferation of self financing courses. Some of the colleges in the public university system are no doubt of very high academic standards, yet there are colleges in rural and semi urban locations which are languishing. There is no systemic thinking to improve the efficiency and working of the colleges. There is too much politicization and it is becoming an unattractive destination for job seekers who prefer to join corporate jobs.

The standards of research in the public universities are very poor. The doctorates being awarded in these universities are of poor quality. The teachers have also lack of opportunities to promote research.

There is also a proliferation of private universities in the state in recent years and there is no robust mechanism for the maintenance of standards in private universities.

Hence there is a need to think of systemic reforms in state public universities and colleges. The issues that need to be revisited are: a) appointment of Vice Chancellors in

the universities; b) the number of colleges affiliate to some of the state universities; c) the financing of state public universities and colleges; d) promoting the standards of teaching and research; e) the process of recruitment of teachers

Questions for discussion

- How can the state universities be strengthened in terms of infrastructure, academic support and provision of qualified teachers?
- How can research be promoted among the faculty members teaching in the state universities?
- Is it a good idea to decide on universities on the basis of number of affiliated colleges?
- Will transparent and competitive appointment process help the State universities
- Is it better to giving autonomy to colleges ?
- Is it desirable that monthly fee should be increased with waiver for needy students ?
- Should Governing body be an empowered body to take decisions with regard to expenditure on the fee collected and remitted into corpus fund ?
- Should administrative & financial autonomy be given to the colleges ?
- Should colleges be given academic autonomy for creating courses ?
- Should fees be increased and colleges be allowed to retain to improve infrastructure ?
- Should contract teachers be replaced by permanent teachers?
- Should teachers be removed when they do not perform ?

VI: Integrating Skill Development in Higher Education

With increasing unemployment among the educated, the need for giving due attention to employable skills in secondary and higher education is being felt increasingly. As skilled workforce is considered the most important human capital required for the development of a country, both vocational education and skill development are known to increase productivity of individuals, profitability of employers and national growth. Vocational education aims to develop skilled manpower through diversified courses to meet the requirement primarily the unorganized sector and to inculcate self employment skills in children through a large number of diversified vocational courses. Given that only 7 to 10 per cent of population is engaged in formal sector of economy, development of vocational education will provide skilled labor force in the informal sector which would further enhance the productivity. The Central Advisory Board on Education (CABE) and National Knowledge Commission (NKC) have also emphasized the need to improve access and participation to vocational education and recommended the flexibility of vocational education within the mainstream education system. There is need to look into the innovative delivery models including strengthening of public private partnership (PPP) in forging linkage between skill development and economic development.

With the impact of technology and globalization on the labor market, the work environment has become more complex, requiring new skills to navigate successfully within a world of work marked by constant change. But the education system is not able to respond to the demands of the labor market. A key issue is to improve the effectiveness of the system in order to enhance the employability skills of the workforce and engender more employment opportunities. Moreover, developing skilled workers enhances the efficiency and flexibility of the labor market. India has set the target of skilling 500 million people by 2022. In view of the policy priority and harnessing the

potential of young people, skill development assumes great importance in the domain of educational planning and management.

Several measures can be taken up in linking education and skill development. There are possibilities of aligning and developing skill courses – NSQF.; Establishment of Community Colleges in General Colleges and Polytechnics; The country may start vocational Studies programmes at the under-graduate level and introducing skill credit transfer to facilitate vertical/horizontal mobility, We may introduce KAUSHAL – Bridging Diploma-Degree Divide and promoting region specific skills. Similarly, the Polytechnics education may focus on employable skills.

Questions for discussion

- At what level of education should skill be introduced?
- Should not skill be introduced in higher education?
- What efforts should be made to introduce need based employable skill courses?
- In what ways, bridge between general and vocational courses should be established to enhance employability of the educated?
- What institutional mechanisms should be established to make provision for certification of skills already in the informal sector?
- In what ways, linkages should be established between educational and industries to promote skill based education.
- What guidance and counseling should be provided to the prospective youth for opting skill based courses?
- Should not Associate Degrees be introduced in the Community Colleges as in the U.S.A.?
- Should not higher education allow entry at any stage and temporary exit at the end of any semester?
- Should regular course enable modules of skill which will increase employability?

VII: Promoting Open and Distance Learning and Online Courses

Conventional education alone cannot meet the needs and aspiration of higher education. Distance education system is emerging as an important means to cater to the increasing demand for higher education. Open and Distance Learning (ODL) is recognised and accepted as an important mode for achieving enhanced access, developing skills, capacity building, training, employability, life-long education and continuing education. Open and Distance Learning has contributed significantly in development of education structure of India. It provides avenues to those students who are not able to leave their jobs or are not able to attend regular classes due to some reasons. Our distance education system consists of one National Open University namely, Indira Gandhi National Open University (IGNOU) and 14 State Open Universities. In addition, many Central/State Universities also offer courses through distance mode. Expansion of ODL is proposed to ensure that 10% of the enrolment takes place in the open and distance learning institutions. There are however issues of quality in distance education, which calls for reforming the ODL system. The Madhav Menon Committee has suggested several changes in the implementation of ODL within the country.

Massive Open Online Courses (MOOCs) have recently received a great deal of public attention. The MOOCs provide free access to cutting edge courses that could drive down the cost of university-level education and potentially disrupt the existing models of higher education. This has encouraged various higher education institutes/universities to put their courses online by setting up open learning platforms.

Indian Universities need to establish the MOOCs program in Humanities, Social Sciences, Sciences and Technologies. This should be in the wider contexts of open education, online learning and the need to democratize education by disseminating as wide as possible. Pedagogically the University need to develop contents of the study programmes, Teaching learning materials, Videos etc. which can be relied on to launch online courses. Developing collaborations with other institutions, depending on

the nature and contents of the courses, is an important part to increase their outreach.

Learners' motivation to participate in MOOCs is a significant area of interest to many higher education institutions and stakeholders. Surveys conducted by researchers at Duke University show that student motivations typically fell into one of four categories: a) gain an understanding of the subject matter; b) for fun, entertainment, social experience and intellectual stimulation; c) convenience, often in conjunction with barriers to traditional education options; and d) to experience or explore online education.

MOOCs have been criticized for adopting a knowledge transmission model; in essence, they are considered to be technology-enriched traditional teacher-centered instruction. Such systems offer an individualized experience in that they allow students to take alternative routes through material and offer automated feedback. However, they do not provide a social learning experience or one of being dealt with personally.

The issue of quality assurance of MOOCs is a big concern for HEIs. In most cases, compared to other online courses, MOOCs lack structure, and rarely include the central role of the instructor or teacher. They are largely self-directed learning, which is a very different experience to formal education. The open nature of MOOCs creates a population that is self selected to be engaged and passionate about this approach to learning. MOOCs demand a certain level of digital literacy from the participants, which has raised concerns on inclusivity and equality of access.

Questions for discussion

- Should open courseware and MOOCs supplement/complement learning in colleges and Universities?
- Do the colleges and Universities in your State have connectivity either through the NMEICT or NKN?

- Would you suggest promoting MOOCs or specific online courses? If yes, could you suggest in which disciplines online courses would be useful in your State.
- What impediments are likely for implementing online courses and how can they be resolved?
- To what extent MOOCs substitute for traditional institution based face to face teaching learning process?
- What are the constraints to access MOOC courses in rural areas?
- How MOOCs can help expanding the learning opportunities or improve quality of the existing courses?
- Should DTH facility be given to students for anytime learning .
- Should On-line testing should account for 20% of the grading.

VIII: Opportunities for Technology Enabled Learning

Today technology is all pervasive and it influences all domains of our daily life. The developments in information and communication technology have changed the way educational services are offered. Technology enables to take education and learning go far beyond the confines of institutionalized instructions, structured study programmes and teacher-centered teaching learning process. ICT helps take learning beyond schools and universities. E-learning is one of the most sought after modes of delivery of educational services.

The World Summit on the Information Society (WSIS) and a series of international conferences in the early 2000s emphasised on e-learning as a priority area of priority. Today digital literacy and e-skills overcomes constraints of age, income and class. Digital literacy (e-skills) has transcended barriers of age, class and income. The government of India plans to connect institutions of higher education and research and provide broadband connectivity at all levels of education and administration.

Technology has capacity to speed up the delivery efforts, standardize the quality of delivery and the quality of services to be delivered to the recipient, provided that recipient, provider, and delivery mechanism all are equally careful to the nuances of the technology. The types of technologies and devices relied on vary widely between regions and countries. Once countries relied on radios and DVD players and now mobile phones, MP3 players, digital cameras, or video-gaming equipment etc are the devices relied on for learning.

Keeping in view all benefits of the technology, the National Mission on Education through Information and Communication Technology (NMEICT) was approved in 2009 to leverage the potential of ICT, in teaching and learning process for the benefit of all

the learners in Higher Education Institutions in "any time any where" mode. It has two major components:

- providing connectivity, along with provision for access devices, to institutions and learners;
- Content generation.

Nearly 404 universities have been provided 1Gbps connectivity or have been configured under the scheme and 19,851 colleges have also been provided VPN connectivity. Over 250 courses have been completed and made available in National Programme on Technology Enhanced Learning (NPTEL) Phase I and another 996 courses in various disciplines in engineering and science are being generated in Phase-II of NPTEL by IIT Madras. The low cost access-cum-computing device Aakash 2 was launched on 11 November 2012. Using the A-View software developed under the NMEICT, several programmes for teachers' empowerment have been conducted for batches of 10,000 teachers at a time by IIT Bombay.

In the context India such technologies and devices will be relied on when infrastructure for adopting such technologies are made available to those in the rural and remote areas. In the area of higher education, we are supposed to upgrade the system to capture the knowledge flow at world level. With a view to care local needs in the context of changes taking place at global level, every college/University engaged in imparting higher education needs to upgrade the facilities in the light of modern technology which can enable learners in a big way. Of course the facilities like Wi-Fi and computers the site of learning and teaching is essential. But again a question arises that to which extent the large number of Students enrolled in the Colleges/ Universities run by the government assistance (in sufficient) could avail the costly facility like Wi-Fi and computers in the library, E library access, E-books, Digital library.

Questions for discussion

- Do students and faculty understand the need and potential of TEL, if so how they wish to integrate it for optimal use.
- Are the necessary infrastructure available for transacting education through technology
- Has NPTEL, e-content of NMEICT or any other electronic content been used by Institutions and if so what are the advantages and disadvantages
- Please list specifically how TEL can help colleges and universities in the educational instruction and research
- Share any best practices, if any
- Should Skill development courses be technologically enabled?
- Should Teachers training be made partly on-line?
- What should be the time line for introduction of skill development courses-
Example: (Suppose the State has 500 colleges) Can we have 50 – by 2015 Academic Session, 100 – by 2016, 300 – by 2017, 500 – by 2018.

IX: Addressing Regional Disparity

Higher education expansion in India is also accompanied by disparities between regions and groups. Ensuring access to higher education is critical to mobilising greater participation thereby increasing the Gross Enrolment Ratio. In fact regional disparities increased in the process of expansion of higher education in India. The variations in GER (Gross Enrolment Ratio) are a good indicator of existing disparities in higher education development among the states. The GER at national level increased from 8.97% in 2002-03 to 20.4% in 2011-12.

The inter-state disparities in enrolment (GER) increased over a period of time. In 2002-03 the GER varied between 5.0 per cent in Jammu and Kashmir and 28.7 per cent in Chandigarh. In 2011-12 the variation in GER is between 8.4 per cent in Jharkhand and 53.0 per cent in Chandigarh. This shows that the variations in GER increased from 23.7 percentage points in 2002-03 to 44.6 percentage points in 2011-12.

The increasing disparities in GER are due to varying rates of growth experienced by different states and union territories. A close examination of the state level data will indicate that larger gains in GER took place mainly in those states where private institutions accounted for a good share of the total institutions and enrolments. The exceptions are smaller states and union territories such as Delhi, Chandigarh. There is also issue of over concentration of higher education institutions in southern states like Andhra Pradesh and Karnataka. Since private unaided sector in particular play an important role in enhancing GER in many states, issues of affordability and quality has been a major concern.

Latest evidences also reconfirm that higher education participation is unevenly distributed across the regions and states and among social groups and gender. While Andhra Pradesh has highest number of colleges i.e. 48 per 100,000 population, it is 6, 7 and 8 per 100,000 population for Bihar, Jharkhand and West Bengal. Similarly,

X: Bridging Gender and Social Gaps in Higher Education

There exists wide disparities among social groups in terms of their participation in higher education. The twelfth plan reports that the variation in GER is 44.9 per cent among the Christians while GER is only 7.7 per cent among the ST, 9.6 per cent among Muslims, and 11.6 per cent among the SC. In all these instances the GER among the females lags behind the males. India has been making efforts to increase the transition from secondary to higher education levels. However, quite often pursuing education becomes more costly for students from poor families because of the loss of perceived earning when they pursue education instead of working for a salary. Studies show that youth from marginalized community prefer to earn livelihood rather than continuing higher education. India has introduced several incentive schemes including scholarships to students from the disadvantaged background. These measures do not seem to be sufficient to attract students from disadvantaged groups in colleges and universities and more importantly to retain them.

For an inclusive higher education efforts should be made to eliminate gender disparities and to significantly reduce urban-rural, inter-regional and inter-social group disparities. This will call for a much larger facilitative and promotional role for the central and state governments as well as the private sector in higher education towards the hitherto marginalized sections of the society. Thus the major emphasis of the policy should be on promoting inclusiveness so as to accommodate more students from the marginalized sections into the ambit of higher education.

The gap between men and women in access to higher education has been eliminated in a few states and is lower in urban areas. The education policy shall aim at complete elimination of this gap, at least at the overall level. Diversify the higher education provisions and programmes which can help in reducing the barriers to access to higher education by socially deprived groups. Improving Access for Differently-abled

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- What measures can be taken to give special emphasis on tribal belts, hilly area and NE?
- Any new avenues of knowledge for coastal belts?

XI - Linking Higher Education to Society

Since Independence, there have been manifold increases in the number of universities, colleges, teachers and students. The growth, to a great extent, seems unplanned and exhibits a weak linkage with employment and the outside world. Various reports have shown that although jobs have been increasing in the professional stream, degrees have been multiplying in general education mainly in arts and humanities. The condition has become ironical. On the one hand, the country does not have adequate manpower to carry out developmental work; on the other hand there is a high incidence of unemployment among the educated youth. The expansion and diversification of educational growth has been almost adverse to the sectoral growth of jobs.

The role of institutions of higher education in societal development is becoming increasingly significant. In recent years, higher education has isolated itself from the society and there is a need to re-establish and strengthen higher education's close linkages with the society. The Universities need to foster social responsibility and engage in community outreach programmes.

Development of higher education is critical for achieving the goal of 'Unnat Bharat' and in developing capabilities of people to face the current and emerging challenges. The unprecedented explosion of knowledge warrants higher education to become more dynamic as never before, constantly entering into uncharted domains. Despite constant efforts made by the Government in higher education, the country is facing the challenges of greater opportunities of access to quality higher education through greater investment in infrastructure and recruitment of adequate and good quality faculty, promoting academic reforms, improving governance and institutional restructuring with aims of improving quality and inclusion of hitherto deprived communities. Higher education should carry the developmental agenda of

Students which will require improvement in basic infrastructure facilities to enable access by the differently-abled students in all institutions of higher education; extension of support facilities to such students; and increased support to teacher preparation to handle their educational needs.

Questions for discussion*

- What further steps should be taken up to enhance participation of SC, ST and Minority groups in post secondary higher and technical education to reap the demographic dividend?
- How should women's participation and performance in higher education be incentivized by providing safe and secure environment within and outside the institutional campus?
- What are the possible ways of formalizing traditional works into the higher education? Since most of the minorities are involved in traditional works.
- How affirmative action interventions should be revitalized to make them efficient and effective?
- How to ensure that students from deprived classes who pass out from school, join colleges and complete studies?
- How to ensure that the girls join colleges or polytechnic ?
- What does improve girls' participation ?
Hostel Scholarship Assurance of safety
- Does introduction of earning while learning courses improve chances of girls joining college ?
- How to bridge the Gender Gaps – Put them in descending order in terms of priority. Mention 1 if it is priority 1
 1. Get girls to school by providing hostels.
 2. Give them scholarship to find accommodation
 3. Give them computing devices & connectivity to get over quality problem of teaching.
 4. Give them skill training so that they can earn while learning
 5. Make flexible entry and exit.

XII: Developing the Best Teachers

The quality of instruction depends on the quality of teachers. The qualification levels and pedagogical experience they have certainly influences the teaching learning processes and learning outcomes. The length of academic preparation, the level and depth of understanding of subject matter and the extent of pedagogical skills a teacher possesses decide the learning outcomes in an institution. Unfortunately, a major share of our teachers, especially in the colleges does not possess doctoral degrees.

One of the major constraints is to attract good students as teachers. Invariably teaching profession is not high in the priority list when the graduates look for jobs. The salary levels and facilities provided to the teachers, although increased in the recent past, are less attractive compared to other sectors. Creation of a pool of brightest students is important in the sense that they will ultimately make improvements in teaching learning process. The UGC is funding a variety of programmes such as provision for awards, scholarships, facilities to participate in conferences etc. to attract and retain intelligent, meritorious and brightest students in academic profession.

After their joining in the teaching profession, they need to be inducted effectively and oriented towards research and teaching. Apart from the off-campus induction process, it will be a good in-house practice if the young and fresh teachers can observe the class teaching of senior and best teachers being in apprenticeship for further cognitive and pedagogical development. The process of enhancing their knowledge of Content, Pedagogy and the Technology especially the knowledge of ICT is essential and need to continue as an integral part of the capacity development of teachers. Extensive use of ICT and audio-visuals are the need of the day when students are more techno-savvy than the teachers.

The research should be an equally important dimension to be emphasized since research improves the level of teaching and academic credibility of the teacher. It is

the country on its inner strength and resources. Besides improving access and equity, it should improve the quality of teaching and learning in higher education institutions.

Questions for discussion

- In what ways, India should prioritize higher education agenda to enhance local engagement by the universities?
- What efforts should be made to promote R&D activities in higher education, which helps regional manufacturing sectors?
- In what ways, existing educational institutions should be revitalized to play vital role in solving the skill requirements to meet the regional and local labor markets?
- Please share some working examples of community engagement by institutions of higher learning
- While pursuing their education, how can students can contribute to their community, village ?
- What do students feel that while doing their studies, they can contribute ?
- After being employed – how do they contribute (Their idea)
- Teachers should be assessed by
 - Community
 - Students
 - Parents
 - By all of them
- What is corrective action for them?
 - 1) Remove 2) Retrain 3) Do not lift probation 4) Deny promotion
 - 5) 1,2&3 together 6) 2,3 & 4 together 7) 1,2,3,4 together
- Is not community welfare an essential part of higher education, especially in rural areas?

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XIII: Sustaining Student Support Systems in Higher Education

India is home to the world's youngest population—with over 600 million below the age of 25. If the government's policy prescriptions of expanding access in higher education and increasing enrollments to the level of the developed world continue, our country will have the world's largest student population. As we approach an era of mass provision of higher education, and a majority of the young learners are likely to be first generation, the scale and enormity of this challenge needs to be carefully envisioned.

Envisioning student support systems need to be a critical element of policy innovation. While the focus has been on physical provision of infrastructure such as canteen, common-room, drinking water and counseling centers etc. until the XI Plan, in the XII Plan, student loans have been spoken about. Student loans are becoming increasingly popular, these also cannot be seen as a reliable method of financing higher education on a large scale. The adverse effects of student loans on students' attitudes and approach towards higher education and the values that these loans impart, besides its accentuating role in commercialization of higher education, need to be carefully examined before further expanding loan programmes.

Besides, in terms of the prevailing culture of institutional practice students are handled by "Dean Students Welfare" within Universities—an office that requires itself to be sensitized on the diversity and changes in student needs. While this emphasis on welfare, support, and physical infrastructure needs to be sustained, the shift from the top-down approach of planning to integrate student voice as an element of policy thinking is urgent. Students need to be envisioned not just as passive recipients of policy transfers, rather as stakeholders with a voice. Students are at the heart of higher education system and beyond the support system they should be treated as important stakeholders in all decision making processes.

The student support system in a university requires good Infrastructure such as common room and recreation facilities, and counseling centers, facilities for Student

only through R &D activities, that teachers can update their knowledge, bring more clarity in their concepts, fly at higher level of teaching and reflect on through action research. The global initiative to get faculty from best universities to come and teach for a term is a commendable idea, but practical problems cannot be overlooked. Scholars teaching abroad are hardly accustomed to the realities of India. However, artificial transplantation of foreign methods of teaching without addressing the requirements of ground reality is bound to be counterproductive.

Questions for discussion

- What strategies can be in place to attract the best from the university sector to teaching profession?
- How could support system for research and academic development be provided?
- What incentives could be provided to promote research among teachers of higher education institutions?
- Whether the scheme of National Mission on Teachers & Teaching is adequate or should it be enhanced with some additional features and what are they?
- What percentage of academic leadership training should be online?
- What percentage of Pedagogical training should be online?
- What percentage of Professional course training – should be online?
- What is the role of industry experts as teachers?
- Is not Academic leadership course essential for all VCs and principals?
- How can teachers be given exposure on a timely or constant basis to new knowledge being developed worldwide in their domain?
- Is not counselling an essential role of teachers also?

- Is interest subsidy of 5% adequate?
- Do you agree that it is not possible to give scholarship to everyone, however meritorious students should not be denied access to higher education.
- What is the minimum percentage it should be linked upto.

Graduation:

- Below 60%
- Minimum 60%
- Minimum 65%
- Minimum 70%
- Minimum 75%

Post Graduation

- Minimum 50%
- Minimum 55%
- Minimum 60%
- Minimum 65%

Grievance Redress, student assistance in terms of financial needs—loans on entry, short-term loans, innovation funds/awards and sustaining inclusiveness—providing for diverse learning needs of students from disadvantaged social backgrounds.

Several schemes of students financial assistance are being implemented at Central and State levels. But the question is have they really served the intended objectives. Some critical views are invited on the existing schemes and what changes will improve the quality of financial support systems for our students so that every aspiring learner can enter HE.

Questions for discussion

- Should there be differential income slabs for existing student financial assistance schemes?
- Apart from affirmative scholarship, a need based scholarship should be linked up to what kind of earning per family.
 - Rs.1 lakh & below
 - Rs.1 lakh to 1.5 lakh
 - Rs.1.5 lakh to 2 lakh
 - Rs.2 lakh to 2.5 lakh
- Has the interest loan subsidy scheme helped the poorest of poor in accessing higher education? If not, what changes need to be effected?
- Open Universities have student support services at local levels, how can local bodies and other similar agencies help to improve services offered at these centres?
- What type of infrastructural facilities to be provided to enhance interaction among students and make them a more inclusive group?
- What type of support will enhance learning opportunities for students especially from disadvantaged groups? Can support be interlinked with skill education?
- Will universal soft loan scheme help students as universal scholarship is not possible?

The underprivileged speakers of minor, minority, and tribal languages often suffer severe linguistic deprivation. It is important for us to realize that the major languages of this country, including English, can flourish only in the company of and not at the cost of minor languages. The ideological position that the development of one language also helps in the development of other languages leads one to expect that the development of even some of the languages could provide a marked impetus to the rest of the languages in the case of the linguistically diverse tribal areas, and spur the speech communities to consciously strive in that direction. This endeavor should lead to further the status of these minor, minority, and tribal languages by allocation of new communicative role(s) and functions, especially in the domain of education at all levels and mass media and thereby lead to more supportive acquisition planning. Many languages are becoming endangered and some have actually disappeared from the Indian linguistic scene despite our claims to multilingualism and maintenance. Every time we lose a language, a whole literary and cultural tradition is likely to be erased.

Multilingualism is the essence of the Indian identity. Even the so-called 'monolingual' in a remote village often possesses a verbal repertoire that equips it to function adequately over a large number of communicative encounters. Indeed, the multiplicity of Indian voices interacts with each other in the Indian linguistic and sociolinguistic matrix, which is built on a variety of shared linguistic and sociolinguistic features.

Questions for discussion

- Should Universities include foundation courses on cultural integration
- How can inter-linkages between education, culture and language be brought about in HE institutions
- How do we encourage cultural exchange between students especially in situations they belong to different language groups and regions?

XIV: Promoting Cultural Integration through Language

Cultural integration is a form of cultural exchange in which one group assumes the beliefs, practices and rituals of another group without sacrificing the characteristics of its own culture. While cultural syncretism carries a negative connotation, cultural integration is generally looked upon as positive because nothing is lost. From this perspective, cultural integration is a healthy intermingling of the beliefs and rituals of two unique cultures. The factors that affect the process of Cultural Integration include future media technologies, actions of governments, the global economy, rise of global media networks and actions of Trans National Corporations. In all of these the role of language is of primary importance. If language, on the one hand, structures our thought process, it liberates us and propels us into unexplored territories of knowledge and imagination, on the other.

We need to locate language education programmes in a multilingual perspective. Multilingualism is a natural phenomenon that relates positively to cognitive flexibility and scholastic achievement. What is critical is that curriculum makers, textbook writers, teachers and parents start appreciating the importance of multilingualism, which sensitizes the learners to the cultural and linguistic diversity around them and encourages them to use it as a resource for their progress and overall growth. The special features and contexts of the languages that fall under the rubric 'other' for a learner are kept in mind while devising pedagogy for teaching and learning.

One must focus attention to the social, cultural, and historical contexts of minor, minority, tribal, and endangered languages. These languages are repositories of rich cultural traditions and knowledge systems and every effort needs to be made to resuscitate and rejuvenate them. This can be done only by making provisions for them in the higher education framework.

XV. Meaning Partnership with Private sector

Expansion, inclusion and rapid improvement in quality throughout higher and technical education system by way of enhancing public spending, encouraging private partnership and initiating long-overdue reforms form the core of various initiatives for higher education. Higher education cannot sustain only through public funding. Given a massive requirement, the public resources may not be sufficient to meet the ever-increasing demand for quality higher education and that our policy and regulatory framework should provide for necessary enabling framework to attract private investment and Public Private Partnership (PPP) in higher and technical education sector. Further, PPP, besides meeting the wide resource gaps, can also serve as an instrument for resource-use efficiency, improvement in service delivery and promotion of excellence. Besides supplementing public investments and reducing dependence on public exchequer for provisioning of quality public services, PPP also brings about the following efficiency gains:

- Promoting cost-effectiveness through risk sharing and efficient use of resources leading to higher productivity and optimal risk allocation;
- Enhancing access to modern technology leading to better project design, implementation, operations and management;
- Promoting accountability through clear customer focus, which, in turn, results in accelerated & improved delivery of quality public service;
- Promoting institutional autonomy by reducing dependence on public funds and in the process significantly reducing external interference in decision making, as it empowers public institutions by making them financially self-sustaining and independent.

Private sector participation should ensure adherence to government policies with respect to reservation and affirmative action. Importantly, institutions established under

- Do you think that development of regional and national Indological centers help preserve the vast repertoire of languages of various regions?
- Should Indology Studies be a part of curriculum?
- How can cultural integration take place through language?
- Should all universities have essential language departments with focus on dying or extinct languages?

- Would you suggest changes in the "not for profit" policy with safeguards for better PPP arrangements
- Is PPP only relevant to technical/ professional education and not for general education
- Are there good working models of PPP in higher education which can be replicated
- What should be done in partnership with Private Sector ?
 - 1) Construction of buildings
 - 2) Maintenance of Building
 - 3) Maintenance of College
 - 4) Maintenance of Labs
 - 5) 1 & 2 both
 - 6) 1 & 3 both
 - 6)2 7) 1 & 4 both
- What changes among the following is acceptable?(You can tick more than 1)
 - ⇒ Management of the facility.
 - ⇒ Takeover of the colleges by Trusts/Corporate entities under CSR
 - ⇒ Corporate to open colleges/universities as non-profits.
 - ⇒ Private sector brings in best professors/adjunct professors – sits in the Governing body.

PPP mode would follow means blind admission process thereby ensuring that no one is denied admission due to inability to afford cost of education. Liberal scholarship provisions, students loan and interest subsidy scheme may be thought of as cushion to build private partnership in higher education. It needs to be noted that partnership with private sector does not mean privatisation, commercialisation and debasement of education. Rather, it explore possibilities of attracting private investment and participation in decision making within the overall framework of education being merit good, while government continues to be responsible for ensuring quality higher and technical education to all. Thus, under the PPP mode, the cherished national objectives of excellence, social justice, inclusion as well as removal of gender, regional and social group disparities will continue to be the guiding principles. What it does mean is that the Policy Instruments of the Government require to be modified from the present role of funding and controlling to assuming a much wider role of being an enabler, facilitator, financier and regulator.

It is against this background that higher education institutions need a shift in policy towards private sector participation in a manner that broad objectives of expansion, inclusion and quality are maintained.

While public private partnerships in higher education have been pursued as a strategy, not many have shown successful results. Hence, the PPP models need to be revisited so as to allow more meaningful collaborations. A critical analysis of PPP in HE , the existing legal provisions and which viable models are possible need to carried out.

Questions for discussion

- Why has PPP models not been so effective in education sector
- Can there be more role for the private sector except providing ancillary services

crore to higher education for the Centre and the States taken together. It has been repeatedly reiterated that we spend at least six per cent of GDP to education

There should be a proper sharing of responsibilities in funding higher education in India between the union (central) and state governments. While the central government directly or indirectly through the UGC funds completely the central universities, only the development expenditure of state universities and colleges is funded by the union government.

Since higher education produces a wide set of social benefits to the whole society, there is no justification to expect the higher education institutions to significantly rely upon student fees. Earlier committees have suggested to allow these institutions to generate about 20 per cent of the budget requirements through student fee and other sources. The CABE committee (2005) has suggested that this 20 per cent may be seen as an upper limit so that equity considerations of higher education are not traded off.

Strong higher education systems are developed in advanced regions of the world with the liberal funding by the state and equally liberal funding by the society at large, specifically through donations and endowments from the corporate sector and individuals, including alumni. Student contributions in terms of fees constitute relatively a minor source of funds. It is necessary to develop a framework in India that promotes this missing source of funds – the non-state and non-student sector. Besides, linking some of the provisions of the Corporate Social Responsibility Act specifically to higher education sector, innovative measures to promote individual and corporate donations and endowments to higher education need to be searched for. A proper system of matching grants to higher education institutions needs to be put in place.

XVI. Financing of higher education

Public funding has its own limitations and constraints in a diverse and vast nation leading to resources being spread thinly if the objective of massive expansion in enrolment with equity is to be fulfilled. Public funding cannot keep pace with rapidly rising costs of higher education. The expansion of student numbers has presented a major challenge which combined with the goal of inclusivity has aimed to provide access to all sections and thereby operate a highly subsidized tertiary education. In financial terms, this has become an unsustainable model. Traditionally, education has been seen as a public good, contributing to society through educating citizens, improving human capital, and boosting economic development. There is an increasing pressure to view higher education as private good, largely benefiting individuals, with the implication that academic institutions, and their students, should pay a significant part of the cost of higher education. Funding shortages due to "massification" have also meant that higher education system and institutions are increasingly responsible for generating larger percentages of their own revenue.

The future of financing education cannot be merely an extension of the present but has to be shaped by new realities, such as the expected massive growth in enrolment to promote the demographic dividend, new mechanisms in cost-sharing that reduces burden on the student and at the same time does not solely rely on the Government as provider, emergence and growth of different types of private and public education providers, innovations in modes of delivery of education etc. Consistent with these realities, new and flexible ways of tackling financing issues in education need to be initiated.

The Approach paper to the XII Plan mentions that about 18 per cent of all government education spending or about 1.12 percentage of GDP is spent on higher education today. This should be raised to 25 percent and 1.5 per cent respectively. An increase of 0.38 per cent of GDP means an additional allocation of about Rs.25, 000

Questions for discussion

- What are the innovative ways of financing HE?
- When States not able to increase their share of funding education and how can the situation be remedied?
- How can Corporate sector participation help mitigate problems of financing higher education and what are the ways that they can participate?
- Is it desirable to have a variable Student fee structure?
- Any other suggestions that can resolve issues of financing higher education
- Should all educational loans provide interest subsidy of 5% and moratorium of 1 year?
- If additional education is taken, should it provide rolling moratorium and additional loan?
- Should each institution should cover 1% meritorious students and 1% needy students not covered by any scholarship by Alumni contribution, fund raising.
- Should each institution raise Alumni fund and local contribution.

XVII. Internationalisation of higher education

Globalization has resulted in greater cross border higher education. However, there is a need for a better policy that encourages collaborations, student faculty mobility etc. Internationalisation has two forms: a conventional one, and a modern one. The conventional one focused on core academic values, while the modern one tends to focus primarily on education in the framework of international trade, with export/import and economic gains as the operative parts. The conventional one focuses more on student mobility and to some extent faculty mobility as a strategy, while under the modern one, business models are formulated that includes not only student and faculty mobility, but also institutional mobility and programme mobility – all with a primary view to make economic gains. It is necessary that we focus mainly on the former model aiming at enrichment of quality in teaching, research and intellectual environment in the universities that result in better knowledge production and dissemination.

It may be good to adopt a selective purposive approach by identifying a few high quality select institutions abroad and invite them to come to India, to share teaching and research with Indian students and faculty. Also, such institutions need to be provided a conducive atmosphere for these institutions to set up campuses and offer stand-alone or joint degree programmes.

While all Indian institutions of higher education may be encouraged, it may be good to identify some of the best institutions in the country to collaborate with selected foreign institutions in such programmes. The Indian institutions may be provided additional required support in this regard, to facilitate, inter alia, student and faculty exchanges. In the same way, not all, some of the potentially high quality Indian institutions may be

XVIII: Engagement with industry to link education to employability

India represents a typical case of over-supply of higher education graduates on the one hand and non-availability of prospective employees in the production sector. The basis for such a mismatch is rooted in the differences between the skills imparted and the skills required in the labor market. The universities and higher education institutions operate independently with very little scope for mutual interactions and engagements.

The realization on wide gaps in 'learning' further extended to 'Employability Skills' in the last decade. Employability of our students is a matter of concern. The industry has been rather disappointed with the kind of graduates emerging from our Education particularly for want of the right kind of employability skills. Though India has one of the largest education systems in the world, employability of the graduates is often quoted as one of the biggest challenges the country faces today

The huge gap between the supply of educated and also employable human resource and its demand by labor market in the country is indeed an early warning signal. As per a NASSCOM report only one fourth of India's engineering graduates and only 10% of its other graduates are employable. Another recent study by PurpleLeap reveals that one third of graduates from the Tier II, III and IV engineering colleges are not employable even after interventional training; The number of readily employable graduates in Tier II, III and IV colleges equal the number of the total talent pool in tier I engineering colleges which (IITs and IISc)) jointly contribute to less than 1% of the engineering graduates in the country. On a scale of 10 the gap between the employability of technical graduates between Tier I and Tier II cities is worrisome. This gap is almost 50% for most of the high growth tech sectors in the country. The situation is far worse in case of graduates from other streams. As per the India Labor

- Can improving infrastructural facilities on university campuses such as student facilitation centres, international student's hostels, faculty guest houses help to attract more foreign students
- Suggest changes in the student faculty exchange programmes and institutional/research collaborations
- Suggest ways by which educational services can be exported
 - Which state universities can take in 10% international students?
 - Do they have adequate ranking and diversity etc.?
 - Which universities should try to get international students in 5 years time?
 - Should these universities get Global Initiative in Academic Network (GIAN) scholars/teachers?

Report only about 46 percent of the graduate and above workers in India are regularly employed.

At the other end of the spectrum is the need for greater investment in research. Industry academia linkages are essential to meet both the ends of increasing employability quotient as well as research needs. While we have various efforts in this direction, these have not fructified as expected. We need to find out how and what is needed for a more fruitful partnering.

Questions for discussions

- Should higher education institutions be oriented to impart skills required by the industry?
- How can institutions of higher education link with industry to change study programmes and improve employability of its graduates?
- How can Industry academia linkages help for start ups and entrepreneurial ventures
- How can Industry orient students to develop entrepreneurial skills
- Should Industry representatives be included in the governing bodies of Universities/ colleges
- How can industry help in framing industry relevant courses for enhancing student employability?
- How can Region and sector specific distinct skill profiles and Institutional Profiles be created and matched? How can we ensure that Agriculture and traditional arts and crafts industry/sector are not ignored?

XIX: Promoting Research and Innovation

The progress of the nation depends on its sustained growth of education and research in science and technology. To meet the objective, our research should bear international comparison in terms of standards of attainment. This will happen, when we determine our priorities and programmes in education and research on the basis of 'indigenous' thinking and needs, and not follow the fashion set by other countries. The development of science must derive its nourishment' from our cultural heritage and internal resource base. The process of scientific attitude and creative thinking should begin from the earliest stage of school education. The science teaching at the school level suffers from lack of academic rigor and infrastructure constraints.

Furthermore, a major weakness of Indian education and research is the relatively very small part played by the universities in the sum total of Indian research. Indian universities are more teaching centered. There is need for teachers and students to perform more and more research work and of better quality. The proliferation of private universities has further deepened the teaching function of the universities. Many of them do have neither facilities nor orientation to undertake and carry out research.

The UGC scheme of assisting teachers, research workers, and laboratory technicians is inadequate and needs to be up-scaled and re-strategized. The universities should prioritize pure (basic) research, leaving applied research and development in all branches of science to other institutions. The private agencies should also devote more funds for research in the university system and share the cost of R&D with public sector.

The government can take several steps to encourage research and innovations in the universities. Promotion of research in liberal arts and social sciences, including inter-disciplinary research is significant too. The government support is needed to create conducive conditions to carry out research. The government needs to increase

its allocations for Rand D activities. At the institutional level, there is a need to link teaching with research. The government needs to invest in faculty development and provide incentives for research, promote collaborative efforts between institutions in research.

Questions for discussions

- In what ways, aptitude for research and innovation should be developed in students and faculty members?
- What measures are needed to develop research capabilities of teachers and students?
- In what ways, research agenda should be prioritized at the higher education level?
- How private agencies can be encouraged and motivated to invest funds in university research and innovation activities?
- Which of the following Strategies need to pursued for promoting research & innovation
 - Outcome based research financing.
 - Liberal research grants for both social sciences and basic sciences.
 - Setting up Incubation Centers with Seed Money to do innovative research
 - Research leading to creation of intellectual property.
 - Setting up Research Parks in central educational institutions.
 - Joint appointments of faculty – enabling researchers to teach and teachers to engage in research.
 - Inter-disciplinary research – Institutions must come together for creating new knowledge at the intersections of existing disciplines.
- How can we make India become a favoured destination for R&D projects. How can we explore getting grants from abroad for R&D?
- Do we need to reconsider setting up Innovation Universities?

XX. New Knowledge

A knowledge economy is ability to create and disseminate knowledge and use it for economic growth and improved standard of living. It is important is to understand the characteristics and the dynamics of knowledge economy and chart out a path of economic development of India in which knowledge management assumes a key role. Knowledge economies have become quite vulnerable and exposed to external forces and need internal mechanisms to be created to exploit opportunities and mitigate threats.

In knowledge economy, therefore, human resource endowed with education and skill is considered important as knowledge can only be produced by human resources who can then transform knowledge into tangible products- technology and goods and services – for the market. A country, therefore, rich in educated and skilled workforce has great potentials to produce, disseminate, adapt knowledge to enhance growth. It is for this reason that educated youth in the age group 18-24 years is an important index of knowledge economy for reaping the benefits of knowledge. Changing demographic composition worldwide has altered the paradigm of development in terms of centre and periphery debate in favour of developing countries, notably India and China, with high number (if not proportion) of highly educated youth in total population.

Highly endowed human resource of a country, however, is no guarantee of the economic development of a nation. The reason is that educated and skilled human resource, so far not so mobile, has become too mobile and hence the use of the human resources may not be specific to the country of origin. The knowledge may be produced and used by countries which can attract talent. Emerging global labour market has enabled easier access to expertise and skills and knowledge embedded in professionals, on the one hand and produced threats of growing brain drain and loss of advanced human capital. Many developing countries, including India, suffer from this dichotomy of factor endowment and its use in knowledge economy.

The ICT revolution added an important dimension to the knowledge economy. With ICT revolution has the mobility of professionals become irrelevant or even more important – diminishing or increasing the asymmetry? A country which is digitalizing and putting IT for various uses and is developing enhanced networking has greater potentials by attracting talents to transform information to knowledge and further increase the usefulness of knowledge by converting it into exchangeable product. Thus wherever information networking is strong and professionals have this important tool, they are much better placed to use networking in knowledge production. The threat of knowledge divide in this regard emanates from digital divide. Hence ICT adds an important dimension to the management of knowledge economy by enhancing the potentials of economy to produce and use knowledge by educated and skilled human resources particularly the professionals.

Knowledge economy has an important dimension of commercialization and marketing. It is argued that protection of knowledge will provide an incentive for the producers of knowledge to produce. The 'knowledge' or 'innovation' translated into a tangible good or 'product' that is protected also carries a price which can be charged from the user of knowledge. Innovation is thus considered a critical pillar of knowledge economy. It means that countries will have to make effort to transform its implicit knowledge i.e., knowledge embodied in brains into an explicit knowledge i.e., in forms in which it can be traded.

Knowledge economies have given rise to interdependence. It is difficult to live in isolation. Hence a country that understands its dynamics should be able to manage knowledge economy in its favour through appropriate strategies. The internationalization of higher education – with mobility of teachers, scientists, students, programmes, educational institutions and collaboration and networking needs to be strategically promoted with top class quality institutions in a country to retain and attract talents.

We are living in a dynamic knowledge based society. Newer technologies and challenges are seeing the birth of new areas of study. Our higher education institutions must identify the new domains of knowledge in the global scenario and build up their capacities to meet this need.

Questions for discussion

- How can we retain our soft power in the global comity of nations?
- How the higher education institutions position themselves to produce new knowledge and use it to the best advantage of the country?
- How do we map continuous/ upcoming new knowledge across the world in all spheres of education and at what stage and how should they be integrated to our syllabus?