CII

Confederation of Indian Industry

Administrative Reforms in Higher Education

White Paper

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<u>Acknowledgement</u>

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Administrative Reforms in Higher Education

1. Introduction

India is at a tipping point in higher education. Opportunities abound but challenges are unprecedented. As the economy strives to grow, this sector has to respond with dynamic changes to meet the escalating shortage of skilled and educated manpower. Students who want to be 'ready-for-life' (for jobs in industry and other spheres in India and elsewhere) are also demanding world-class education in conventional as well as non-conventional streams of education.

A market-driven approach, adoption of emerging technologies, effective fund raising and deployment backed by right policy framework and hassle-free implementation by the Government are key to boosting higher education. Can the educators and administrators in the country bring about a paradigm change in the education scenario?

The demand-supply gap and India's emerging status as a leading knowledge economy have led to the entry of private and foreign education providers imparting education through conventional, distance learning and online programmes in the country. But the spread of higher education still remains a challenge. Those who can afford to go abroad for studies spend collectively about $7 billion annually. According to the Ministry of Human Resource Development (MHRD), only about 18-19 per cent of our population in the age group of 18-23 years is enrolled in higher education and a mere 6 per cent of this group are graduates with degrees. With the rapid growth of advanced agriculture, manufacturing, infrastructure, service and associated sectors in the economy, it is imperative that the populace is equipped to contribute to and benefit from higher education. Education itself is emerging as a major knowledge-skill intensive service sector.

As per target set by MHRD, we need to achieve a gross enrolment ratio (GER) of 30 per cent by 2020. This requires a radical overhaul of the higher education system, with regard to diversity, expansion, access, enrolment, quality and continual innovation. Failure to address these needs and foster rapid growth will adversely affect India's economic prospects and the welfare of its citizens. We believe that the present crisis

in higher education will give the necessary impetus for effecting radical changes immediately.

In recent years, India has seen tremendous growth in the number and types of institutions providing higher education. In order for organizations and individuals to remain competitive in a rapidly changing global and domestic environment, demand for education, skills and training has become more critical than before. To respond to this demand, new institutions have continued to emerge, but with difficulties. We need to remove these difficulties to effect rapid response.

Hence, it becomes necessary to identify the sustainable and replicable new formats of delivery that will help in expansion and increase access to quality and relevant higher education. At the same time it is also necessary to address key issues and share an overview and insight into expansion, access, equity, quality, diversity and relevance in higher education.

In the new global economy, wealth is no longer measured in terms of natural resources, raw materials, production output or other conventional means. Growth is made possible by intellectual capital, human talent, creativity, knowledge, skills and the greatly expanded capacity of people to deal with complex systems. There can be no progress without right type of education. There can be no elevation without education.

The need of the hour is to tailor education reforms in such a way that they fulfill the needs of students for opportunities in future—immediate, near and long-term.

The Radhakrishnan Commission on University Education (1948-49) had enumerated essential goals for development of higher education in India. The Commission eloquently articulated the reforms needed in the education sphere in the 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 a powerful instrument of social, economic and cultural transformation necessary for the realization of 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 essence of the message will be applicable even now.

2. Overview

India has a large number of higher education institutions in the world, with 700 universities and 36000 colleges, as per University Grants Commission's Higher Education at a Glance document. At 25 million, the number of students enrolled in higher education is the second largest globally. However, the GER at 19.4 per cent, as per All India Survey on Higher Education, MHRD, 2010-11 (Provisional),is low compared to other countries, including developing countries. Critical gaps exist in the capacity and management systems of the higher education structure. Precise statistics of those who drop out after enrollment is not available; it is also estimated to be high.

We still mostly follow old and traditional methods of teaching and training. Much of the teaching is theoretical without connecting it with direct practical experience. In addition, in the era of digital advancements, we will have to connect to and use information and communication technologies extensively so that we can grow at faster pace and meet the global standards of education. Inter-disciplinary approach in teaching and training requires innovative minds to get involved with the development of curriculum. As in the real world so also with knowledge, it cannot be broken up and be confined within the narrow boundaries of discipline. Hence not only inter-disciplinary but trans- disciplinary approach is required to meet the challenges of the real world, with practical experience being a touchstone at each stage.

Another critical issue in higher education is the lack of quality teachers. Proper focus is required on policies and strategies to attract and retain high quality faculty and to provide continuing in-service education to teachers. Teachers need to be trained in information and communication technology (ICT) and analytical understanding of inter-disciplinary areas and subjects. In addition, the rigid and old specifications for teachers need a relook; why not use the highly qualified workforce in industry, business and government to take part of the courses? They will imbibe practical insights as well.

There has to be focus on teaching, learning and pedagogy as well as a learner-centric approach where the teacher is the facilitator in the acquisition of knowledge and values and teaching in skills.

India's large and young population requires access to affordable and credible higher education in order to raise equity and promote inclusive growth. Its emerging role in the global economy, as well as its declining age dependency ratio in an environment of dwindling workforce in developed countries, afford it a key role in international industry and services sectors. India also has the capacity to become a global education services provider.

These objectives would require huge increase in the expenditure on higher education, both by the government and the private sector. A conducive environment must be built for attracting investment in education from private domestic and overseas sources. Hassle-free and innovative regulatory mechanisms for quality of service provision, accreditation, curriculum revision, and others need to be established.

Private sector must be incentivized by the government so that it can contribute whole-heartedly in the field of higher education as philanthropy. There is a strong need to work on an effective public-private synergy since private players can provide industry exposure to students. An effective role of private sector with proper incentives and support from government agencies will definitely help bridge the wide gap between educated youths and high unemployment in the country. Public-private collaboration with a planned strategy would generate more jobs for educated youths. There is also a need to revisiting the existing taboo against for-profit education providers.

3. Context

The government of India has recently taken a series of measures to revive the economy by focusing on implementation and executive decisions to create a climate for growth. There is an urgent need for similar action in the field of education, for swift, clear and decisive steps to achieve growth, equity and excellence. The 12th Plan has projected that enrollment in all degree and diploma courses at higher education level will increase from the current 20 million to 30 million with particularly high rates of growth in PhD, post-graduate and under-graduate technical education. These targets

do not include distance and open education programmes. It also recognizes that "expansion in higher education during the 11th Plan was led by the private sector which on the one hand has been helpful since it created capacity which the public sector could not and on the other hand this has led to sectoral, regional and social skews and given rise to concerns about quality." It has further declared that during the 12th Plan private sector has to be steered to achieve the interrelated goal of equity, expansion and excellence. The focus should now be on creating an environment in which the private sector can ensure more funds and build larger, sustainable and higher quality private institutions."

It is agreed that higher education dialogue among various stakeholders should not be stuck at lamenting about age-old problems. We need to focus on pragmatic solutions, which can facilitate changes. While the criticality of overarching reforms cannot be overlooked, some immediate changes are required which do not necessarily need any major policy initiative and can be fast-tracked in the form of administrative reforms.

The aim of this White Paper is to assess the impact of the reforms initiated till date and those still required (short-term and long-term). It focuses on key areas which do not require parliamentary legislation or major policy interventions like regulatory reforms (divergent inspections and norms by multiple regulatory bodies-one window approach); role of accreditation (multiple independent agencies in a decentralized manner); corporate social responsibility (to strengthen industry-academia interface); optimum utilization (common sharing of facilities), expanding the skilled-teacher pool (by usingf the skills of those who are not directly in education but in other vibrant sectors of economy). Fiscal issues of education sector (tax concessions, endowments, inability of institutions to garner surpluses for institutional building etc) need to be addressed.

According to 12th Plan, about 94 per cent students enrolled in government-funded (48 per cent of total enrolments) or government-controlled private institutions come under the state higher education system. It is worth noting that most private education institutions (which amount to 52 per cent of all enrolments in India) are affiliated to state universities and come under their academic and administrative control. Thus, any effort for development in this sector must recognize the importance of State higher education institutions and aim to improve their status and it is equally important to

focus on the issues related to Centre-State coordination.

Keeping this in view, the Confederation of Indian Industry (CII) has prepared this White Paper outlining recommendations to revitalize the higher education sector in India with greater participation of the private sector in a more liberal and encouraging investment climate.

4. Administrative Reforms – Single Window Approach

The government of India at the highest level has recently taken several steps to expedite approval of projects and speeding up of their implementation in order to revive the growth in economy. This is a welcome step as many clearances required from multiple agencies have prevented new investments and establishment of new facilities and further expansion of existing facilities.

Since several departments and agencies of government are involved in clearances, a high-level committee or agency for speedy clearance and post clearance approvals will go a long way in speeding up of projects and the resultant physical investments. Whatever applies to physical infrastructure applies equally to human infrastructure. It is well known that the lack of adequate human resources and requisite skills is a major obstacle to economic development and growth. The various targets envisaged in the 12th Plan and beyond cannot be met unless there is a substantial progress not only in terms of numbers but also in terms of quality, relevance and skills.

Already in the 11th Plan a substantial part of the demand for higher educated man power has been met by private sector institutions. The opportunities for our young people have to be increased rapidly both by public and private sector institutions. The investment in the private sector institutions should be facilitated so that actual development takes place quickly and young people are made to avail the facilities.

What stands in the way of this necessary and desirable growth are the barriers to entry and expansion as clearances by multiple agencies (like UGC, AICTE and professional councils like NCTE, PCI, BCI, MCI, NCI, RCI etc., apart from various departments of state governments) with varying norms, standards, speed and efficiency are required. Even within the Central government there are often multiple ministries and autonomous

agencies (professional councils) which set their own norms and procedures without requisite coordination causing needless delay and ambiguity.

Regulation of entry through a licensing procedure could be there for totally new institutions in the current format but the norms for the same should be simple, clear and objective with fast-track and hassle-free transparent processes.

In these circumstances a single window mechanism (at the Central and State levels) would be desirable so that it can lay down the necessary norms for establishment and expansion of institutions and also it may lay down norms in an objective and transparent manner and accord clearances expeditiously**. In this context, the recent steps taken by the government for expediting industrial and economic projects could preferably be emulated and added to by ensuring speedy post-approvals.**

4.1 Recommendations

4.1.1 Government has set up empowered inter-ministerial high powered committee to fast-track pending projects. Since many of the educational projects are getting delayed at various stages owing to delay in multiple approvals, an empowered fast-tracking committee which could be approached for expediting pending approvals (after a specified time period of say 3 or 6 months) in an expeditious and time-bound manner could be set up immediately.

4.1.2 The committee should be empowered to fast-track not only the clearances of the projects but also the post clearance approvals.

4.1.3 The decision of this committee should be binding on all ministries and agencies concerned, in order to de-bottleneck the existing process.

4.1.4 This committee may also be empowered to effect simple amendments of the rules and regulations of the Acts of the concerned bodies and the administrative processes of the ministries concerned.

4.1.5 An empowered task force should be setup at different levels with participation of all respective stakeholders (representatives) so that anomalies are removed at the initial stage itself.

4.1.6 For Center-State coordination, there should be coordination between one empowered committee constituted by the respective States and the empowered Central committee (with all representatives).

4.1.7 In addition to expediting the clearances of the projects and post-project approvals, the committee should facilitate simplification and clarification of norms so that they are kept to the minimum and/or very objective. For example, norms of land, capital adequacy etc. While norms for land, capital adequacy and other requirements could be part of the regulatory procedures, it is not necessary to regulate the introduction of new courses, the numbers to be admitted and detailed facilities in terms of equipment etc. to be provided. These are best left to the concerned universities or higher education institutions subject to good accreditation processes.

4.1.8 Potential investors should be allowed to apply and seek clearances at any time during the year unlike the present system where some of the regulatory agencies invite applications within specific dates.

4.1.9 Verification of quality standards should be left to accreditation agencies and not be made the concern of any regulatory body. What should be regulated and what should not be regulated should also be made clear.

4.1.10 Accrediting process would enable continuous improvement in standards, in particular for teaching-learning process, curricular upgradation and standard assessments.

4.1.11 Professional councils and user stakeholders should be represented in regulatory/accreditation bodies and encouraged to set up independent accreditation agencies.

4.1.12 Considering the size of the country and large number of institutions to be covered, a large number of independent autonomous accreditation agencies distributed geographically could be recognised for this purpose.

4.1.13 Regulatory / accreditation norms should apply equally to both government and non-government institutions and must be applied accordingly.

4.1.14 Since some of the higher educational institutions will seek to provide qualified manpower for global market, ranking and accreditation by reputed international agencies should be promoted.

4.1.15 Government funding for R&D projects, facility improvement etc. should be available to government and private institutions in that discrimination.

Top-most priority should therefore be given for establishment of a single window agency with transparent and clear norms.

5. Higher Education and Corporate Social Responsibility

5.1 CSR- what it entails

Section 135 of the Companies Act, 2013 stipulates that every company with a net worth of Rs 500 crore or more or turnover of Rs 1000 crore or more or a net profit of Rs 5 crore or more during any financial year shall constitute a Corporate Social Responsibility Committee of the Board consisting of three or more directors of which at least one director will be an independent director. CSR thus becomes *a* Board responsibility.

The Board has to formulate CSR policy for the company and disclose the content of such policy in its annual report and place it on the company's website. It has to ensure that the activities under CSR are undertaken by the company and also ensure that the company spends at least 2% of its average profits during preceding three years on CSR. It will also give preference to local area in CSR activities. If a company is not able to spend the above amount on CSR it will indicate in its report the reasons for the same.

5.2 CSR - defined

CSR has been defined "as a way of conducting business by which Corporate entity visibly contribute to the social good. Socially responsible company do not limit themselves in using resources to engage in activities that increase only their profit. They use CSR to integrate economic, environmental and social objectives with the company's operations and growth. It is a process by which an organization thinks about and evolves its relationship with stakeholders for common good and

demonstrates a commitment in this regard by adoption of appropriate business processes and strategies. Thus CSR is not charity or mere donation."

5.3 CSR - policy

A company may implement CSR programme through an organization registered as a Trust, or Section 25 (Section 8 of New Companies Act) company or society or foundation or any other form of entity operating within India.

Or it may implement the same through such entities not set up by the company itself. Only activities undertaken within India will be considered as CSR and only activities which are not exclusively for the benefit of the employees of the company or the family members will be considered as CSR activity.

Companies may collaborate or pool resources with other companies to undertake CSR activities. Among the activities related to CSR promotion of education and employment enhancing vocational skills have been included.

5.4 The CSR Committee should prepare the CSR policy including the following:

5.4.1 Specify the projects and programmes that are to be undertaken.

5.4.2 Prepare a list of CSR projects / programmes which a company plans to undertake during the implementation year, specifying modalities of execution in the areas / sectors chosen and implementation schedules for the same.

5.4.3 CSR projects / programmes of a company may also focus on integrating business models with social and environmental priorities and processes in order to create shared value.

5.4.4 CSR policy of the company should provide that surplus arising out of the CSR activity will not be part of business profits of a company.

The rules also indicate the format of the annual report to be included in the Board report by the qualifying company. This is an important report as submission of this report is mandatory and non-submission would lead to penalty. (CSR spending itself has not been declared mandatory but failure to meet CSR targets has to be explained through reasons for the same in the annual report).

The draft rules also list in schedule-7 the activities which may be included by companies in their CSR policies. These include among others, promotion of education, promoting gender equality and empowering women, ensuring environmental sustainability, employment enhancing vocational skills and social business projects.

5.5 Recommendations

A good part of CSR activities could thus be focused on higher education. In this context, the following suggestions may be considered:

5.5.1 Promotion of scientific research

5.5.2 All proposals for industry-academia interaction for enhancement of quality and provision of training may be specifically identified as constituting CSR activity.

5.5.3 Social business projects may be defined further as including pilot projects and innovative demonstration units and all incubation arrangements.

5.5.4 Since it becomes a Board policy and may apply to a large number SMEs and not only to large corporations, there is considerable potential for contributing to higher education in this area both individually and collectively while SMEs may benefit through training, advisory and project research.

5.5.5 Industry in the first few years mayadopt few specific project (such as interaction between industry and academia) with highest impact may as priority area for CSR.

5.5.6 Corporate can use this opportunity not only to make substantially more contribution to education, research and incubation projects but also professionalize the implementation through training, research and monitoring. The various capabilities of corporate sector could also be utilized for optimal use of funds in this area.

5.5.7 Case studies of successful CSR activity in higher education in India and abroad may be widely disseminated.

6. Financing of Higher Education - Mobilising Resources

It has been estimated that out of about Rs 4 lakh crore(this Plan outlay is over and above on going annual recurring expenditure, required for higher education), public sector outlay in the 12th Plan is not likely to be not more than Rs 1 lakh crore.

The major portion of the new outlay required is thus to be mobilized from non-government resources which are (i) student fees (ii) donations and community contributions (iii) CSR (as discussed above) and otherwise (iv) private investment in higher education – Indian and foreign, and (v) loan funds provided by the banking and other sectors.

It is necessary to create a climate of mobilization of funds by the higher education institutions to meet the requirements. A number of suggestions have been made in regard to each of these areas and the main lines of action needed are highlighted below.

6.1 Student fees

In many professional colleges such as medical and engineering where initial investment and equipment is of a high order, capitation fee used to be an important source of funding. However, due to various judicial decisions capitation fees may have gone underground. It may be time to have the decisions reviewed in the changed circumstances. The shortage of fees in quality institutions is likely to do more damage than charging of capitation fee.

Even if this thorny issue is not reviewed one must re-emphasise and publicise the right of institutions to charge adequate fees to cover all the costs and provide a surplus for development. This should apply to all sections of higher education, private and public. Equity considerations should be met by provision of easy access to scholarships and loan funds. Hence, the first step in this regard should be to remove the restrictions or obstacles relating to fee structure policies.

At present, there are multiple committees that go into the fees charged by various institutions, sometimes even with retrospective effect. The principles and guidelines which form the basis for fee fixation by non-profit institutions have been laid down by

various judicial decisions. Educational institutions are non-profit entities but they are permitted to make reasonable surpluses every year.

The accounting format has been standardized by the Institute of Chartered Accountants (ICAI) and the accounts are duly audited by qualified auditors. In such circumstances, there can be no scope for regulation of fees.

The institutions should be permitted to charge fees according to the market requirements and the services they offer and there should be no further restrictions of fee structure by any authority.

At the very least, a different track has to be followed for those institutions with a proven track record of imparting quality education and Industries with proven track of quality and sustainably setting up new educational institutions.

6.2 Donations and community contribution

In a large country like India where higher education institutions have to be widely distributed in different geographical areas community contributions should be encouraged through appropriate policy measures. Local communities must be involved and take pride in their institutions.

Donations by individuals, alumni and institutions should be encouraged through tax incentives. All donations to higher education institutions should be 100% tax deductible. Donations for research, innovation, vocational education and scholarship should be eligible even for higher levels of tax deduction, say 200 per cent.

6.3 Foreign investment in higher education

In the last decade, several foreign universities and higher education institutions have entered into arrangements for collaboration with Indian higher education institutions and universities.

6.3.1 These collaborations include joint degree, exchange of faculty, exchange of students and twinning arrangement. Recently, the government and UGC have tried to encourage the opening up of campuses by good universities from abroad. Till now the foreign universities had to find an Indian partner but now they can open their own campuses.

6.3.2 Since all this will be in the nature of non-profit activity, leading foreign education institutions may not evince much interest but persistent effort can be made to ensure investment in high quality research, development and innovation as well as in other areas of collaboration.

6.3.3 Such collaboration is necessary to make some of the higher educational institutions world class, competing with the best. It will also have salutary effect on academic practices and processes.

6.3.4 Higher education institutions registered under Section 25 (section 8 of New Companies Act), should be allowed to raise equity in India and abroad.

6.3.5 Such companies should be allowed to carry forward surpluses from year to year for the development of institutions under their management. These suggestions should apply to investment within India and abroad.

6.3.6 Since Section 25 (section 8 of New Companies Act), companies cannot declare any dividend there seems to be no rationale for restricting carry-over of surpluses from year to year.

6.3.7 Higher educational institutions have to build assets on long-term basis and hence removal of restrictions of various kinds on Section 25 (section 8 of New Companies Act) companies dealing with education is fully justified and necessary.

6.4 Sharing and optimal use of existing resources

One important aspect of creating a climate for new investment – Indian or foreign- is to ensure that the existing investment is made full use of.

While the Prime Minister as the Chairman of the National Council on Skill Development has categorically and very seriously emphasized the importance of optimal use of existing facility/resources and improving the efficiencies and performance of all institutions, some of the inspection and regulatory procedures as adopted in practice often work against the sharing of facilities by different departments and programmes of an institution.

Efficient management of a given institution will require optimal use of facilities with sharing arrangements for various resources like equipment's, rooms, faculty etc.

Arelevant task force should go into the necessary rules and regulations and official orders to ensure that the sharing arrangements are reasonable but routinely prohibiting sharing of facility will only lead to idle equipment, and wasteful expenditure.

7. Additional Financial Resources

7.1 <u>Service tax</u>

It is noted that the clarification given by government through circular that service tax should not be based on services provided to and by educational institutions, to prevent all apprehensions in this regard, and to set the matter beyond all doubts, this clarification may be reflected in the provisions itself.

7.2 <u>Tax incentives</u>

There are many important steps which are needed to promote investment in higher education. The 12th Plan has recommended that education sector should have the benefit of infrastructure loan and enhance scholarship fund. Decisions in this regard can be taken by executive decision and the sooner this is done the better it will be for the climate for new investment. Following additional suggestions may be considered:

7.2.1 Remove negative budgeting signal in education sector.

7.2.2 Non-degree and non-university courses should be treated at par with degree and affiliated courses for tax purposes.

7.2.3 Education loan and repayment should be treated on par with housing loan, that is, principal as well as interest repayment should be eligible for tax concession. The above should be applicable to all education including vocational and skill development except for coaching classes.

7.2.4 There should be minimum interest rate on education loan to ensure that needy students can pursue higher education and link repayment to employment and income tax.

7.2.5 Education fee paid should be outside the purview of fringe benefit tax.

7.2.6 Contributions made by a corporate – foundations etc., to a research center or a center for excellence being part of a university or higher education institution or a new or recently established university approved by government or for a programme under university industry partnership should

be eligible for deduction from taxable income to the extent of 200 per cent of such contribution or as recommended by Narayana Murthy Committee.

7.2.7 All other contribution to higher education may be made eligible for 100 per cent tax deduction.

7.2.8 Access should be provided to banks, financial institution loans as priorities for infra-structure support to higher education.

7.2.9 Provision of bank loan: Education should be treated as infrastructure sector and provided long-term loans. Mega funds should be created for refinancing of loan by bank for education research, skill development, extension and innovation and for scholarships.

7.2.10 State should look at incentivizing private / corporate sector participation by means of viability gap funding (VGF) administered by the ministry of finance.

7.2.11 Educational institutions, like others, need to build up their infrastructure and continuously upgrade them. They can do so only by accumulation of surpluses and funds. The requirement that not more than 15 per cent surplus can be carried over to the next financial year comes in the way of such accumulation and infrastructure development and should be done away with.

7.2.12 There should be no limit to the surplus to be earned and to be carried over to the next financial year. In any case, the surplus is not distributable.

7.2.13 Higher education institutions registered under Section 25 (section 8 of New Companies Act) should be allowed to raise equity in India and abroad.

8. Need for promoting innovation and incubation

There is a need for active encouragement and implementation of various measures which have been proposed from time to time for industry's interaction with academia and in particular for innovation and incubation.

The involvement of several higher education institutions across the country linking higher education and research with development of skills to increase competitiveness and employability requires that:

8.1 The processes of incubation, pilot projects, last mile linkages etc. should be promoted on an adequate scale. The RUSA plan provides a unique opportunity in this regard.

8.2 RUSA provides substantial funds to state governments for consolidation and progress of state higher education institutions.

8.3 It also encourages a coordinated plan and its monitoring through State Councils of Higher Education.

This opportunity should be utilized by requiring the state councils to specially encourage research and development, extension and pilot projects and above all incubation projects and their implementation.

University rules and regulations and the Acts need to be reviewed from the point of view of providing necessary flexibility and relevance for dealing with multifarious agencies.

The new welcome initiative of the Central and State Government under RUSA provides a unique opportunity for fostering innovation eco-system in higher education.

One of the most important roles of institutions of higher education is to foster innovation and creativity. But if we expect institutions to play this important role in society and the economy, then mechanisms are needed to evaluate the extent to which they are achieving this purpose.

Innovation is a driver of growth and well-being. New technologies, products, services and organisations create jobs and rejuvenate industries – while making others obsolete. To reap the gains of innovation, policy makers need to understand how the way we innovate is changing and what this implies for education and training policies.

"Dramatic developments in technology and research aimed at understanding how people learn are radically changing the practice of teaching, offering instructors new and exciting ways to engage with students.

"New technologies have transformed the way students interact with the world, with information, with knowledge and large scale reforms are currently being tried in the education sector.

"Despite the current decade being a 'decade of innovation', nothing much seems to be happening to rethink the curriculum and pedagogy to make it more conducive for promotion of creative and innovative minds.

"The motivation for education reform comes from the fact that many of the greatest global challenges demand technical expertise and innovation.

"The key to… leadership tomorrow depends on how we educate our students today, especially in those fields that hold the promise of producing future innovations and innovators."

Recognising the fundamental role of education in promoting and nurturing an ecosystem of innovation, the need is to encourage innovations in existing educational institutions – universities, colleges and schools, as well as promoting new educational models and innovative platforms for knowledge creation, dissemination and application. Creating an environment to encourage students to think creatively and innovatively on important issues of their community and society is important.

Identifying gaps, problems and needs (also may be creating needs) that may not be known, even exist and finding solutions to them is the need of the hour. Sometimes fostering innovation and coming up with innovative steps need not necessarily be in response to known problems.

8.4 Encourage cross-disciplinary, multi-disciplinary and trans-disciplinary approach in education through institutions based on liberal arts philosophy with focus on technology and research.

8.5 Building synergy, trans-disciplinary and trans-domain for solutions to know problems.

8.6 Create an environment that helps bring synergy in a manner where in today's world the need is to find, to bring together, various disciplines, domains – and not just to bring together in terms of inter-disciplinary or multi-disciplinary but trans-disciplinary and trans-domain kind of a situation or groups or problem solvers, who would find solutions to known problems (problems faced by the whole world and engaging the entire community).

8.7 Create a different environment and throw up innovative solutions - building up on ideas creates a different environment for innovation and the intersections between

these various domains, thoughts and stakeholders throws up entirely innovative solutions.

While some of the social changes necessary for remedying the above situation will take time, energy and persuasion, much can be achieved by focused and targeted programmes in many of the key areas, as per the suggestions in this White Paper.

Strong leadership and clarity of vision at various levels are required to implement the above reforms.

Statutory Professional Councils

1. All India Council for Technical Education (AICTE)
2. Bar Council of India (BCI)
3. Central Council of Homeopathy (CCH)
4. Central Council of Indian Medicine (CCIM)
5. Council of Architecture
6. Dental Council of India (DCI)
7. Distance Education Council (DEC)
8. Indian Council for Agriculture Research (ICAR)
9. Indian Nursing Council (INC)
10. Institute of Cost and Works Accountants of India (ICWAI)
11. Medical Council of India (MCI)
12. National Council for Teacher Education (NCTE)
13. National Council for Rural Institutes (NCRI)
14. Pharmacy Council of India (PCI)
15. Rehabilitation Council of India (RCI)
16. State Councils of Higher Education (SCHE)
    a. Andhra Pradesh State Council of Higher Education
    b. Kerala State Higher Education Council
    c. Tamil Nadu State Council for Higher Education
    d. West Bengal State Council of Higher Education
    e. Uttar Pradesh State Higher Education Council
    f. Tripura State Advisory Board for Higher Education
    g. Pradesh Himachal State Advisory Board for Higher Education
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18. Veterinary Council of India (VCI)

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