

**IMPLEMENTING  
NATIONAL EDUCATION  
POLICY-2020  
A ROADMAP**

**Editors**

**Pankaj Mittal**

**Sistla Rama Devi Pani**



**Association of Indian Universities**

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NATIONAL EDUCATION POLICY-2020  
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## FOREWORD

When the country is in a crisis of clarity, the best thing that the Government can provide is a policy which can steer its citizens towards a luminescent path. National Education Policy–2020 is one such effort by the Government of India towards providing a precise roadmap to come out of the foggy situation prevalent in the higher education system of the country. In the post-independence arrangement, Higher Education Institution (HEIs) in India have been variously tasked with endogenous mandates to support the building human capacity in order to address local, national, and regional issues. The quality of HE has been a perennial issue that has been affecting our ability to build world-class higher education institutions. Issues relating to access and equity are some of the significant challenges which could not garner deserved efforts. Internationalization, global rankings, accreditation, assessment, and the benchmarking of institutions are other compelling factors. The struggle to offer world-class education has created immense pressure on higher education policy, regulation, and the governance of universities.

In the given scenario, NEP–2020 not only provides tangible and effective solutions for most of the problems ailing higher education in the country, but also lays a clear path for future needs. It emphasizes on education as being fundamental to human development and the high-quality learning opportunities that the nation must provide to its young minds to prepare them for the future. While there is a lot planned for higher education, the implementation of the Policy is taking place gradually. Now, higher education institutions need tips and guidelines for implementing the Policy.

*‘Implementing National Education Policy–2020: A Roadmap’* is a collection of essays containing the roadmap for implementing different recommendations of NEP–2020. The authors have presented their insights into growth, transition, and other emerging issues that the institutions of higher education have experienced during the last few

decades. It contains articles from some of the leading educationists, policymakers, academics, and edu-preneurs in the country. They have critically examined the recommendations of the policy with a view to understanding how public policy, regulatory and governance reforms in higher education can help India transform, nurture and develop institutions of global excellence.

I am confident that the suggestions provided in this book for implementing the Policy would be very helpful in re-envisioning our universities to be in sync with the educational needs of the 21st century and beyond.

**Col. Dr Thiruvasagam  
President, AIU**

## PREFACE

The National Education Policy–2020, a long time coming, has laid a clear path for transforming the education system of the country. With significant recommendations to shift the focus of education towards quality and skill development, the Policy aims to revolutionize the Indian Higher Education space to catch up with the global needs of the 21st century. All these years, India’s policy goals have been primarily focusing on access, expansion, and specialization with very little focus on skill and holistic development. The National Education Policy–2020 could break from the past by including quality, skill development, and multidisciplinary approach as the critical levers for improving student learning outcomes. While deftly indicating that higher education is much beyond human resource development, it takes a long-term view in terms of the emphasis on flexibility in entry and exit, and the option to skill courses to ensure that our youth are equipped for a rapidly changing job scenario. The Policy is truly forward-looking, innovative, democratic and learner-centric. Now, it is the turn of implementers to realize the Policy in letter and spirit.

On having a bird’s eye view of the scenario of Indian higher education through the lens of its statistics, we get to see deep troughs which indicate severe crises that we are undergoing in various dimensions ranging from Gross Enrolment Ratio to the World Ranking of universities. There is no doubt that the system requires a major overhaul right from bottom to top. But the question is — how deep is the bottom? Even if we consider enrollment of students in undergraduate programs as the bottom point, we find that standard of a major chunk of students seeking admission is much below the expected minimum level. Obviously, the root of this crisis penetrates deep to the school level as well. If we can get this one thing right, i.e., find the missing links and bridge the gap of quality and standard between school and higher education levels, we can make a tremendous impact on the overall higher education system. The Policy, *inter alia*,

aims to eliminate problems of quality, pedagogy, structural inequities, access asymmetries, rampant commercialization, and varied other dimensions. It is high time that we break the silos and intervene in every nook and corner of the higher education system to eliminate systemic deficiencies vis-a-vis realize the policy.

The great challenge with us now, therefore, is the strategic implementation of the Policy. In this context, we need to prepare a robust action plan leading to ease of implementation. To gather innovative strategies for the implementation of various recommendations of the Policy on Higher Education, the Association of Indian Universities adopted multipronged approaches. Bringing out an edited Volume on '*Implementing National Education Policy-2020: A Roadmap*' is one among them which is aimed at gathering views and suggestions of experts and erudite scholars on implementation of the Policy and to provide a well-structured input to the Government, along with insights to practitioners of higher education on implementation strategies of NEP-2020. Each essay is unique and comprises the words and opinions of the author. This will also be good reading for future generations in their course of actions pertaining to higher education.

Hope the readers will cherish reading the essays written by eminent scholars and distinguished experts in a broad range of fields that cover a variety of topics pertinent to the implementation of NEP-2020.

The book is a result of collaborative effort. Of greatest importance are the contributors of essays and we duly acknowledge them. We are thankful to the members of our tiny team, Dr Yogita Kanwer, Research Fellow for all the academic support and Mr N C Nath for his support in printing and production.

Dr (Mrs) Pankaj Mittal

Dr S Rama Devi Pani

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**ROADMAP FOR HOLISTIC IMPLEMENTATION OF  
NATIONAL EDUCATION POLICY-2020**



# IMPLEMENTING NATIONAL EDUCATION POLICY–2020: RESTORING INDIA'S STATUS AS *VISHWAGURU*

**Pankaj Mittal**

*The education sector across the world has recently observed transformations in the programme structure and outcomes due to rapid scientific and technological advancements. The New Education Policy–2020 (NEP–2020) of India is a remarkable step in the above direction since it is developed on the philosophy and thought of ancient Indian knowledge, wisdom and truth. It has been drafted considering the local and global needs of the country. The NEP–2020, if implemented in letter and spirit, has the potential of transforming India into ‘Vishwaguru’, the global superpower. The policy emphasises that the curriculum and pedagogy of our education system must be able to develop among students a deep sense of respect towards the fundamental duties and constitutional values; share of bond with one’s country; and conscious awareness of one’s roles and responsibilities in a changing world.*

## PRELUDE

Education is the most important attribute for any country to enable it to achieve its full human potential, developing an equitable and just society, and promoting overall national development. The education sector across the world has recently observed transformations in the programme structure and outcomes due to rapid scientific and technological advancements. Therefore, the education system of a country must align itself with the changing employment landscape and global ecosystem. In India, there is a need to focus on universal access to quality education to reap its demographic advantage and for maximising country’s talent and resources. The pedagogy should



inculcate critical thinking and problem-solving approach in students thereby making education more experiential and enjoyable. The newly launched National Education Policy–2020 (NEP–2020) in India is a remarkable step in this direction. It has been developed on the philosophy and thought of ancient Indian knowledge, wisdom, and truth and drafted considering the local and global needs. The NEP–2020 of India is a forward-looking, innovative, and student-centric policy documented and prepared by the committee chaired by Padma Vibhushan Dr K Kasturirangan, Former Chairman, ISRO. The policy is most democratic as the suggestions were obtained from more than 2 lakh people, starting from the grassroot *panchayat* level to that of experts.

## FUNDAMENTAL PRINCIPLES ENVISAGED IN NATIONAL EDUCATION POLICY–2020

The fundamental principles envisaged in the policy, which would be guiding both the education system at large as well as an individual institution within it, (GOI–2020), are:

- *Recognising, identifying, and fostering the unique capabilities of each student*, by sensitising teachers as well as parents to promote each student’s holistic development in both academic and non-academic spheres;
- Giving highest priority to *achieving Foundational Literacy and Numeracy* by all students by Grade 3;
- Enabling *Flexibility*, so that learners can choose their learning trajectories and programmes, thereby being able to select their own paths in life, as per their talents and interests;
- Having *No hard separation* between the arts and the sciences, between curricular and extra-curricular activities, between vocational and academic streams, etc. in order to eliminate silos between different areas of learning;
- Implementing *Multidisciplinary and holistic education* across the sciences, social sciences, arts, humanities, and sports for a multidisciplinary world in order to ensure the unity and integrity;

- *Emphasizing on conceptual understanding* rather than rote learning and learning-for-examinations only;
- Encourage *creativity and critical thinking* for logical decision-making and innovation;
- Inculcating *ethics and values both human and constitutional* like empathy, respect for others, cleanliness, courtesy, democratic spirit, spirit of service, respect for public property, scientific temper, liberty, responsibility, pluralism, equality, and justice;
- *Promoting multilingualism and the power of language* in teaching and learning;
- Inculcating *Life Skills* such as communication, cooperation, teamwork, and resilience;
- *Focusing on regular formative assessments for learning* rather than the summative assessment that encourages today’s ‘coaching culture’;
- *Extensive use of technology* in teaching and learning, removing language barriers, increasing access for *divyang (differently abled)* students, and educational planning and management;
- *Respect for diversity and respect for the local context* in all curriculum, pedagogy, and policy, always keeping in mind that education is a concurrent subject;
- *Full equity and inclusion* as the cornerstone of all educational decisions to ensure that all students are able to thrive in the education system;
- *Synergy in curriculum across all levels of education* from early childhood care and education to higher education;
- *Teachers and faculty as the heart of the learning process* – their recruitment, continuous professional development, positive working environments and service conditions;
- *‘Light but tight’ regulatory framework to ensure integrity, transparency, and resource efficiency* of the educational system through audit and public disclosure while encouraging innovation and out-

of-the-box ideas through autonomy, good governance, and empowerment;

- Ensuring *Outstanding research* as a prerequisite for outstanding education and development;
- *Continuous review* of progress based on sustained research and regular assessment by educational experts;
- *Deep-rooted pride in India* and its rich, diverse, ancient and modern culture, knowledge systems and traditions;
- *Education as a public service* – access to quality education must be considered a basic right of every child; and
- *Substantial investment in a strong, vibrant public education system* as well as the encouragement and facilitation of true philanthropic private and community participation.

The NEP–2020, if implemented in letter and spirit, has the potential of transforming India into a *Vishwaguru*, the global superpower. The policy emphasises that the curriculum and pedagogy of our education system must be able to develop among students a deep sense of respect towards the fundamental duties and constitutional values; share of bond with one’s country; and conscious awareness of one’s roles and responsibilities in a changing world. The NEP–2020 will empower teachers at all levels of education and help them to teach effectively while making use of technology. The policy will also help in recruiting and retaining the best teaching professionals to aid in shaping citizens for the next generation. It envisages a quality education for all, irrespective of their place of residence, origin, caste, etc: the policy particularly focuses on the betterment of historically marginalised, disadvantaged, and underrepresented groups. This article will highlight the impact expected on implementation of NEP–2020 on the governance of higher education; restructuring of universities; reforming of programmes; internationalisation of education; re-energising the faculty; and creation of opportunities for students.

## GOVERNANCE OF HIGHER EDUCATION

At present, the Indian Higher Education System is governed by multiple regulatory bodies comprising of University Grants Commission (UGC), All India Council for Technical Education (AICTE) and seventeen statutory professional councils like National Council for Teacher Education (NCTE), Medical Council of India (MCI), Bar Council of India (BCI), Indian Council for Agricultural Research (ICAR), Nursing Council of India (NCI), Council of Architecture (COA), Dental Council of India (DCI), etc. To remove structural overlaps in terms of functioning of these regulatory bodies and to segregate the functions of regulation, funding, and accreditation, the policy has recommended setting up of a Higher Education Commission for India (HECI) as an umbrella institution. The commission shall have the following four independent verticals each having its own well-defined roles and functions:

- i. National Higher Education Regulatory Council (NHERC)
- ii. Higher Education Grants Council (HEGC)
- iii. National Accreditation Council (NAC)
- iv. General Education Council (GEC)

The National Higher Education Regulatory Council (NHERC) shall be responsible for regulating the higher education with a view to coordinating and maintaining the standards of higher education in the country. It will function as the common single point regulator for the entire higher education sector including teacher education but excluding medical and legal education. NHERC shall regulate in a “*light but tight*” and facilitative manner based on the concept of public self-disclosure of finances, infrastructure, faculty/staff, courses and educational outcomes, etc.

The Higher Education Grants Council (HEGC) on the other hand will only perform the function of disbursing grants. It will carry out funding and financing of higher education based on transparent criteria after assessing and evaluating the institutional development plans submitted by higher education institutions and the progress made on their implementation. HEGC shall also disburse scholarships

and developmental fund for improving the quality of academic programmes.

The National Accreditation Council (NAC) will take into account the accreditation of Higher Education Institutes (HEIs) in the country. At present, NAAC undertakes institutional accreditation while NBA undertakes program-wise accreditation. The National Accreditation Council will consider both of the above as well as multiple accreditation bodies, if required. The NAC will be a ‘meta-accrediting body’, which will approve the bodies that can further accredit the institutions and their programmes. The accreditation of institutions in the future will depend primarily on basic norms, public self-disclosure, good governance and outcomes. The NAC may approve multiple institutions as recognised accreditors while developing a robust system of graded accreditation. It is also proposed that in the long run, accreditation will become a binary process as per global practices.

The General Education Council (GEC) will frame the National Higher Education Qualification Framework (NHEQF) in sync with the National Skills Qualification Framework (NSQF). The GEC will frame expected learning outcomes and graduate attributes at different programme levels. It shall also set up norms for credit transfer, equivalence, etc. through the NHEQF. The GEC shall also identify 21st century skills that are required to make our students global citizens.

The policy also envisages that the existing Statutory Professional Councils like the Indian Council for Agricultural Research (ICAR), Veterinary Council of India (VCI), National Council for Teacher Education (NCTE), Bar Council of India (BCI), Nursing Council of India (NCI), etc. shall act as professional standard setting bodies. They will be the members of GEC and shall draw the curricula, lay down academic standards, and coordinate between teaching, research, and extension in their domain areas. These bodies will set up standards for different professional programmes, which would lead to a profession requiring a license to practice like medical, architecture, law, etc. It is felt that this architecture will ensure functional separation and eliminate overlapping of roles between different bodies and will help in effective governance of higher education in India.

## RESTRUCTURING OF UNIVERSITIES

The NEP–2020 has recommended that higher education institutions shall be transformed into large multidisciplinary universities, colleges and HEI clusters, each of which should have at least 3,000 students. The aim is to improve quality as well as access to higher education. This will be achieved by giving graded autonomy to around 40,000 colleges and converting them into an independent, autonomous degree awarding colleges. The whole procedure will require a lot of mentoring and hand-holding by the affiliating universities as mentors for these colleges so that they can work towards empowering the latter to function independently. A lot of capacity building of teaching and other staff would also be required for this. Further, the NEP–2020 has classified universities into three categories:

- i. Research Intensive Universities
- ii. Teaching Intensive Universities
- iii. Autonomous Degree Awarding Colleges

The Research Intensive Universities will give equal emphasis to research and teaching but would be more research focused. On the other hand, the Teaching Intensive Universities will also conduct both research and teaching, but their main focus will be on teaching. The last category, i.e., Autonomous Degree Awarding Colleges may also indulge in some research activities, but their primary focus will be on the teaching of UG/PG courses. Thus, the NEP–2020 will result in realignment of the university structure. The policy suggests that all the universities will be multidisciplinary in nature, i.e., there will be no programme specific or single faculty universities like Law Universities, Medical Universities, Technology Universities, Agriculture Universities, etc. All these universities, over the time, would be required to add disciplines and academic programmes to become multi-faculty. This will ensure holistic development of students with some basic knowledge of all the fields and give them the freedom of choice, should they wish to pursue any other subject.

While giving impetus to online education, the policy further suggests that the highly accredited institutes will now be able

to conduct both open and distance learning (ODL) and online learning programmes. This will help in improving the GER to 50 percent as envisaged in the policy and at the same time give a lot of flexibility to the students in terms of pursuing education along with work or for pursuing two degrees at a time. The new UGC regulations on online education issued in early September, 2020, has already given the freedom to run online programmes by NAAC “A” grade universities and has mandated that 40 percent of the courses in a regular programme can be done through Massive Open Online Courses available on SWAYAM, the Indian MOOCs platform. To remove any type of interference in functioning of the universities, the NEP–2020 also gives autonomy to universities with good accreditation rating to establish a Board of Governors (BoG) to independently govern the university free of any external interference. The Board of Governors shall consist of a group of highly qualified, competent and dedicated individuals having proven capabilities and a strong sense of commitment to the institution. The BoG shall be responsible and accountable to the stakeholders through transparent self-disclosures of all relevant records. Board of Governors can work in an independent manner and will be responsible for taking decisions on behalf of the University including the appointment of Vice Chancellor, which will be done through a rigorous, impartial, merit-based and competency-based process, led by an Eminent Expert Committee constituted by the BoG. The Board of Governors shall also ensure the continuity of university policies during the leadership transition, i.e., whenever the Vice Chancellor completes the tenure and is replaced by a new Vice Chancellor. The restructuring of universities as envisaged in the NEP–2020 shall lead to having large, multidisciplinary universities in future with a lot of autonomy and independence that would certainly improve the quality of higher education.

## REFORMING PROGRAMMES

In our ancient Vedic culture, students were taught about 64 *kalas* (*art forms*) which not only comprised of music, dance and art but also included subjects like humanities, languages, science, medicine,

technology, etc. (Kapur and Singh, 2005). The NEP–2020 considers our ancient Vedic system comprising of ‘knowledge of many arts’ as the base for formulation of liberal education for 21<sup>st</sup> century students. This liberal system of education gives freedom to each student to pursue knowledge in his or her own field of interest without creating any artificial boundaries. Under the domain of liberal education, the NEP–2020 has transformed the three-year graduation programme into a four-year programme, having multiple entry and multiple exit facilities. For instance, if any student leaves the graduation programme midway due to any reason, he/she will get a certificate on completion of one year, a diploma on completion of two years and can obtain degree if he/she completes the degree course of 3 or 4 years anytime later. The main advantage of this is that a student can resume his education at any point of time in life and from any university in the country by getting re-entry into the system. The studies pursued earlier will not go waste and one can resume the studies from the second or third year if he/she already possesses a certificate or diploma. Moreover, if one is not able to continue studies further, he/she becomes eligible for the job on the basis of the certificate and diploma qualifications. The policy has further abolished the M Phil degree in view of the fact that normally every individual who completes M Phil further goes for a doctorate degree and thus the degree as such is redundant. Moreover, in the earlier UGC regulations, the M Phil degree holders got exemption from UGC-NET to be eligible for appointment as lecturer but in 2010 regulations this was abolished. Thus, the M Phil degree has no much utility.

While advocating for holistic and multidisciplinary education, the policy also emphasises on education through projects in the areas of community engagement, environment education and value-based education. In keeping with the global requirements, the Policy recommended that education should create global citizens who are aware of global issues and work towards resolving them. They should create and promote more peaceful, tolerant, inclusive, secured and sustainable societies.

Another significant reform in the NEP–2020 is regarding admission to PhD programme. Now, the Master’s degree would no longer be



the only criteria for admission in PhD. A Bachelor's degree holder with research would be eligible to directly get admission in the PhD program. Similarly, the duration of Master's degree shall be of 2 years if the Bachelor's degree is of the 3-year duration, but one can obtain a Master's degree in one year if she/he has completed a four-year Bachelor's programme with research. Therefore, a very flexible structure has been given in the NEP–2020 for the benefit of students. The policy also focuses on experiential learning of students through internships. Therefore, it has been made compulsory for students of every program to undergo internships during semester or winter breaks in the industry, business houses, schools, studios, with craft persons, research institutions, etc. Institutions are now supposed to allow active engagement of the students with the practical side of their learning which would be helpful in improving their employability and entrepreneurship opportunities. The policy further suggests an integrated BEd programme of 4 years so that the students who wish to become teachers can be effectively groomed in the aforesaid duration. The NEP–2020 also emphasises on ensuring the quality of online degree to be at par with the degree obtained via regular mode.

Another significant reform in the NEP–2020 is on assessment and evaluation of students. The policy focuses on continuous assessment and evaluation of students throughout the semester rather than on a three-hour examination at the end of semester. The continuous assessment of students can be done through various techniques like projects, activities, face-to-face interactions, group discussions, etc.

The well drafted reforms in the programme structure will not only give a lot of flexibility to the teachers in trying innovative ways of teaching while using different pedagogical tools and technology, but will also give a lot of freedom to the students to learn at their own pace, the subjects of their choice with emphasis on experiential learning.

## **INTERNATIONALISATION OF HIGHER EDUCATION**

The Policy emphasises on promoting India as a global study destination providing premium education at affordable cost to restore its status as '*Vishwaguru*'. The policy has laid the path for opening of

campuses of high performing Indian universities abroad in order to promote our cultural heritage, ancient knowledge system, and the Indian system of medicine like Ayurveda, Naturopathy, Yoga, etc. Apart from this, the top 100 universities of the world will be allowed to open their campuses in India. A legislative framework for such an entry shall be put in place while giving special dispensation regarding regulatory governance and content norms at par with autonomous institutions in India. To promote research collaboration and student exchanges between Indian and foreign universities, the credits acquired in foreign universities may be considered for being awarded a degree by Indian universities. This is going to be a revolutionary step in view of the fact that around 7-8 lakhs students from India go abroad for their higher education and only about 46,000 students come to India to pursue their higher education and that too only from neighbouring countries like Nepal, Bangladesh and Afghanistan. The primary focus of the policy is to increase the number of inbound students from other countries to India and to take measures to retain the outbound ones who go abroad in large numbers to study in foreign universities. This can also result in the saving of a large amount of foreign exchange for our country. Also, having foreign campuses on Indian soil will help in promoting international collaborations in terms of faculty exchange, student exchange, curriculum exchange, semester exchange, research collaborations while inducing a spirit of competition in Indian universities, which may help in improving the quality of our higher education. To promote the internationalisation of higher education in India, international offices will be set up in universities to ensure an international experience to the foreign students in Indian universities. The NEP–2020 has laid a lot of emphasis on internationalisation of higher education which can help in making India a global hub for providing quality higher education and also result in Indian universities to slide up in the global rankings.

## RE-ENERGISING THE FACULTY

The NEP–2020 acknowledges the importance of faculty in promoting the quality of higher education and has proposed that the faculty be given the freedom to design their own curricular and

pedagogical approaches within the approved framework. It seeks to empower the faculty to work effectively through innovative teaching, research, and service as these will be the key motivators for them to do truly outstanding and creative work. The policy also recognises the need for reducing the student teacher ratio, and excessive workload of the teachers to ensure that teaching remains a pleasant activity and there is adequate time for interaction with students, conducting research, and performing other university activities. The faculty has been given complete freedom to decide what to teach within the overall framework, and how to teach, assess and evaluate students based on continuous evaluation of their students throughout the semester/year, rather than depending upon a three-hour examination. The policy focuses on acknowledging, rewarding, and incentivising faculty members based on their performance rather than the number of years spent. To produce good academic leaders and administrators, the policy focusses on identifying good faculty having leadership qualities and administrative acumen and preparing them for leadership roles by training and grooming them for future roles. Recognising the importance of online teaching and seeing its potential during the COVID-19 lockdown times, the NEP–2020 also focusses on the capacity building of teachers to equip them with the skills and nuances of effective online teaching.

The capacity building of faculty and incentivising them for good work will go a long way in promoting quality education. The autonomy will also certainly encourage and motivate them to try new technological and pedagogical tools to excel in their teaching.

## **PROMOTING RESEARCH**

The policy while stressing the importance of research has mentioned that the research and innovation investment in India is only 0.69 percent of GDP as compared to 2.8 percent in the USA, 4.3 percent in Israel, and 4.2 percent in Korea. While stressing on increasing the total funding on higher education to 6 percent of GDP, the policy has also strongly emphasised on increasing the research funding at

par with the developed countries. It recognises the need for increased research funding to universities for inculcating an environment of research and, a culture of innovation in the country. The policy has recommended the establishment of the National Research Foundation (NRF) which will completely oversee and monitor the funding of research grants to universities. The National Research Foundation will avoid overlapping of research grants from different sources and carry out linkages of universities with various funding sources. The primary activities of the NRF will be to:

- (a) fund competitive, peer-reviewed grant proposals of all types and across all disciplines;
- (b) seed, grow, and facilitate research at academic institutions, particularly at universities and colleges where research is currently in a nascent stage, through mentoring of such institutions;
- (c) act as a liaison between researchers and relevant branches of government as well as industry, so that research scholars are constantly made aware of the most urgent national research issues, and the policymakers are constantly made aware of the latest research breakthroughs, so as to allow breakthroughs to be optimally brought into policy and/or implementation; and
- (d) recognise outstanding research and progress.

The establishment of the National Research Foundation and an increase in the research funding to match the international standards will certainly improve the research output of the country, leading to better world rankings.

## **CREATING OPPORTUNITIES FOR STUDENTS**

The NEP–2020 is a forward-looking and student-centric policy, in which a lot of freedom is given to students in terms of selection of subjects and courses, options of multiple universities and pace for the completion of a programme. Students can now take a break from their studies and resume their education from where they left off at

any point in time. The transfer of credits from online mode to regular mode and *vice versa*; from foreign universities to Indian Universities; and from one programme to another will give a lot of flexibility to the students to choose as well as modify their learning path. The policy focuses on the use of open education resources like the National Digital Library of India (NDLI), e-pg pathshala, e-pathshala and platforms like SWAYAM for online teaching and learning. The policy further focuses on the need for bridging the digital divide across the country by providing equipment and services in rural areas of the country in the least possible time frame. The NEP–2020 focuses on blended learning, i.e., a combination of online and offline learning, and addresses the issue of employability of students by focussing on vocational education alongside that of academic learning. It is imperative that vocational education should be integrated with higher education so that the status of vocational programs can be brought on par with regular degree programs. The policy also underlines the importance of giving due prestige, dignity, and honour to skill-based education. The most innovative concept introduced in the policy for the students is the establishment of the Academic Bank of Credit.

Academic Bank of Credit (ABC) will prove to be a game changer for the students by providing wings to the students for a free flight of knowledge. ABC is conceptualised as a digital/virtual/online entity to function like a Commercial Bank with students as account holders to whom the bank shall provide a variety of services including credit accumulation, credit verification, and credit transfer. ABC shall provide credit deposit accounts to all the students who are studying in any recognised Higher Education Institute (HEI) or even to those who are not students at present but wish to pursue education as learners and want to upskill themselves. The academic credits earned by a student from multiple institutions, both through online or regular modes, shall be credited to her/his account. After the accumulation of credits up to a given threshold, a student can redeem the credits for an academic degree at any convenient time. The ABC shall facilitate student mobility across the system including movement between campus-based education and ODL; movement between skill-based programs and formal degree programmes; and movement between

Indian and foreign Universities. It will also allow the students to learn over a long span of time, thus promoting lifelong learning.

The students who may or may not have enrolled in higher educational institutions but wish to pursue education in the pursuit of knowledge and want to consolidate their academic records for employment or educational purposes, can register with ABC. It enables a student to accumulate institutional credits from numerous and/or various sources into one’s credit account. The ABC shall be a service to facilitate the integration of the campuses and distributed learning systems, by creating student mobility within the inter and intra university system. It will help in seamlessly integrating skills and experiences into a credit-based formal system by providing a credit recognition mechanism, which will help students to plan their own learning objectives and decide the pace at which they would like to learn. It shall promote access, equity, quality, relevance, flexibility, mobility, collaboration, transparency, recognition and integration to improve the competitiveness and efficiency of our education system. ABC shall prove to be a panacea for the students for pursuing quality lifelong education while exercising freedom of subject, freedom of time, freedom of university, freedom of country and freedom of speed.

## CONCLUSION

With the new NEP–2020, the country has got an innovative and ambitious policy, which is well-grounded in the roots of the Ancient Indian Knowledge system after a long wait of 34 years, or rather, after a whopping 185 years since the infamous minutes of Macaulay in 1835. Since the NEP–2020 focuses on the holistic development of students, it has the potential to restore India’s status as a *Vishwaguru*. The essence lies in its implementation in letter and spirit in a time bound manner. For this, all stakeholders, i.e., the central government, state governments, statutory and professional councils, state councils of higher education, universities, colleges, vice chancellors, principals, administrators, faculty, and students have to work hard with passion to ensure that the vision set in the policy actually sees the light of the day.

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# FACILITATING ACCESS TO QUALITY HIGHER EDUCATION: THE PATHWAY FOR A NEW INDIA

Amitabh Kant | Piyush Prakash

*The ancient Indian education system was an epitome of excellence demonstrating multidisciplinary teaching; diversity of scholars from around the world; extensive research and debate; as well as real time interactions with the tangible world of practice. It's the 'ideal type of education' that one would aspire for. However, the burgeoning populace of India presents the enormous challenge of delivering high- quality education at an unprecedented scale, yet at affordable costs. This article attempts to present some potential interventions towards meeting these markers of excellence while acknowledging the present challenges and progress made thus far.*

## PRELUDE

The modern Indian higher education system has come a long way since independence to become the third largest education system in the world. It caters to over 37 million students, next only to the US and China. In the last decade itself, the overall Gross Enrolment Ratio (GER) increased from 15 percent in 2009–10 to 26.3 percent in 2018–19 (AISHE, 2018–19). While the number of students enrolled has increased from 20 million to 37 million (an increase of 85 percent) in the same time period, the number of universities and colleges has increased by 127 percent (993 universities) and 54 percent (39,931 colleges). This is a great achievement in terms of increasing access to higher education.

On the equity front, the Gross Enrolment Ratio (GER) for females (26.4 percent) is higher than that of males (26.3 percent), with nearly half of the enrolled students being girls. The GER for



SC and ST students also increased from 11.1 percent and 10.3 percent in 2009–10 to 23 percent and 17.2 percent respectively in 2018–19. Despite these commendable developments in terms of access and equity in higher education, there is a lot of ground yet to be covered for India to have an inclusive and vibrant higher education system.

## **Meeting the Targets of Sustainable Development Goal 4: Quality Education For All**

The global education development agenda reflected in the Sustainable Development Goal 4 (SDG–4) of the 2030 Agenda adopted by India in 2015 seeks to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by 2030. The National Education Policy–2020 reiterates the commitment by setting the target of 50 percent GER in higher education by 2035 (*GoI, 2020*).

### ***Access***

The current GER in higher education is 26.3 percent with 37.4 million students in higher education. With the current population rate, it can be estimated that we would need approximately 33.7 million additional seats in higher education to achieve a GER of 50 percent by 2035. This would require an enormous amount of human and financial resources in the next 15 years.

### ***Equity***

The rise in GER across various identities such as gender and socio-cultural groups Scheduled Cast (SC)/Scheduled Tribe(ST)/Other Backward Class (OBC) is a result of the persistent efforts and welfare measures taken by the central and state governments such as scholarships, free residential schools for girls from marginalised communities and monetary incentives. However, as the All India Survey on Higher Education (AISHE) data demonstrates, regional inequity still plagues the country. For instance, the GER in higher education in Tamil Nadu is 49 percent but in Bihar, it is still 13.6 percent. Similarly, there are

only 7 colleges per lakh population in Bihar as compared to 50 in Telangana. In order to achieve the goal of 50 percent GER by 2035, a strategic roadmap targeting low-performing areas is critical.

A study by the World Bank in 2008 used National Sample Survey Office (NSSO) data from the years 1983 to 2004, with statistical estimates of educational attainment, access, and transition to higher education across socially and economically disadvantaged groups. One of the significant findings of the paper was that variation across states in enrolment is largely due to variations in the completion of higher secondary education. The Unified District Information on School Education (UDISE) 2018–19 data shows that the GER drops from 79.6 percent at the secondary level to 58.56 percent at the higher secondary level. This is the point where maximum students drop out. These figures are alarming for some eastern and north-eastern states. As a result, the pool of students for higher education also shrinks, leading to a GER of only 26.3 percent in higher education — much below the world average of 37 percent.

### *Quality*

The Indian Higher Education Institutes (HEIs) have been credited for having produced outstanding scientific and technical manpower, which has propelled the transition of India's economy towards a knowledge economy. The IT manpower of the country has proven its mettle across the globe, as has the scientific community. However, low rankings in the research domain — in comparison to the US and China — are a matter of concern.

There are only 15 researchers per lakh population in India as against 111 in China and 423 in the US. Out of the total scientific publications in the world, the share of Indian scientific publications therefore stands at a low 4.8 percent vis-à-vis 18.6 percent for China and 17.8 percent for the US. A closer analysis of the data from AISHE 2018–19 reveals that PhD enrolments constitute only 0.5 percent of total student enrolments in India, with only 2.5 percent of the colleges in the country running PhD programmes. This explains the research deficit in the nation. It is quite evident that we need

to create a conducive environment so that more students take up research in India.

The quality of an educational system is also characterised by the quality of its graduates and their employability. The India Skills Reports 2019 by Wheebox (2019) shows that only 46.3 percent of India's graduates are employable (*Wheebox, 2019*). Though the number seems low, recent improvements have been encouraging. The employability increased from 33 percent in 2014 to the current 46.3 percent and can be attributed to recent initiatives by AICTE to improve employability in colleges.

## THE NATIONAL EDUCATION POLICY–2020: A CATALYST FOR TRANSFORMATION

NEP–2020 marks a monumental development in the country's education system. Advocating a forward-thinking, cogent reform, NEP–2020 is an amalgamation of need-based policy, cutting-edge research and best practices, paving the way for a New India. It does a thorough analysis of issues pertaining to access, equity and quality in the higher education system of India. The recommendations suggested therein are revolutionary, progressive and catalytic in nature. The potential interventions to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” under SDG Goal–4 have been discussed below in the light of recommendations of NEP–2020.

### **Access: Bringing Higher Education to the Doorsteps of Students**

As discussed achieving the goal of 35 percent GER by 2035 would require 33.7 million additional seats in higher education. However, relying only on the brick-and-mortar model of education might not be the prudent way forward — both financially and logistically. The following measures have the potential to propel our country towards universal higher education.

### ***Open and Distance Learning and Online Degrees***

There is a pertinent need to expand the scope of Open and Distance Learning (ODL) and Online Degrees(OD). As per AISHE Report 2018-19, at present the distance mode of education accounts for only about 10 percent of the total higher education enrolments (AISHE 2018-19). The latest UGC regulations allow Higher Educational Institutions having a National Assessment and Accreditation Council (NAAC) score of 3.26 and above or having a rank of 1-100 in the University category of the National Institutional Ranking Framework to start full-fledged online programmes without prior approval of the UGC. However, the following measures need to be taken to ensure the success of these initiatives:

- a) In order to make OD and ODL programs more utilitarian, equal treatment be given to them as the regular degrees/ diplomas/ post-graduate programmes. It must be ensured that they are not deprived when it comes to admission to higher courses and employment scrutiny– both in the public and private sectors.
- b) In order to increase the reach of OD, convergence with existing schemes of the Government of India will be instrumental. The *Bharat NET Yojna* needs to be leveraged for community online study centres at the Panchayat level in coordination with the Ministry of Rural Development and the Ministry of Panchayati Raj. In urban areas with high mobile device penetration, the recently announced public Wi-Fi Access Network Interface (PM-WANI) schemes to set up wi-fi hotspots that can democratise online learning by offering free internet connections. For optimising its usage, PM-WANI could be restricted to essential educational and related sites for students.

### ***Reducing Dropouts at Higher Secondary Level***

The drop in GER from secondary to higher secondary is 34 percent as per UDISE 2018–19 data. As already highlighted, this leads

to a smaller pool of students eligible for higher education. Clearly, without improving the access and retention rate at the school level, we won't be able to achieve the access goals of 50 percent GER in higher education by 2035. To address this issue, a couple of steps might need to be taken differently:

- a) National Sample Survey Office (NSSO) surveys have identified the reasons for school drop-out as: no interest in studies, low academic performance, domestic work, economic activities by boys, etc. A targeted approach will have to be taken to address the root causes of drop-out.
- b) State Institutes of Open Schooling (SIOs) will have to be strengthened on the lines of National Institute of Open Schooling (NIOS) in a phased manner, starting with states with high incidence of dropouts and lower GERs.

## **Equity: Making Sure that Every Student Learns**

The Government of India has been taking a targeted approach towards the overall development of socio-economically disadvantaged groups. These targeted approaches are based on the identification of geographical areas with a high incidence of poor educational indicators, namely the Educationally Backward Districts and Educationally Backward Blocks.

The NEP–2020 has widened the ambit of Socio-Economically Disadvantaged Groups by covering gender identities, caste and tribe identities, urban poor, minority identities, out-of-school children and vulnerable children. Therefore, it is an opportunity to ensure that every single child in the country from the remotest of places gets a quality education. The key lies in identifying the geographical areas for setting up Special Education Zones (SEZs). NITI Aayog has done a similar exercise to identify what we know today as Aspirational Districts. The following measures may be taken to set up SEZs:

- a) A composite index based on certain developmental indicators critical for education may be prepared;
- b) Each block or district may be assigned a score on the basis of the above indicators;

- c) The poorest performing areas may be designated as SEZs.

The Gender Inclusion Fund and Inclusion Fund for SEDGs as proposed in the NEP will provide the necessary human and financial resources to design and implement evidence-backed interventions in improving the educational status in these SEZs.

## **Quality: Facilitating Education that Matters**

The National Education Policy–2020 strives to achieve all markers of excellence — multidisciplinary teaching, diversity of scholars from around the world, and profound research and debate.

### ***Research Output***

India's Research & Innovation investment was only 0.69 percent of its Gross Domestic Product (GDP) in 2018–19 as per AISHE data. Investments are critical to support budding and established researchers and the innovation ecosystem in the country. The proposal to establish a National Research Foundation to fund research in a non-partisan and merit-based approach will facilitate budding researchers to undertake path-breaking studies. The following measures may also be considered to infuse a culture of research in the country:

- a) School education is a feeder to higher education. The students should be exposed to inquiry-based learning from the very beginning. The Atal Innovation Mission at NITI Aayog has established tinkering labs in schools to give the students hands-on experience on the latest technologies and the principles of design thinking. Similar programs may be designed by state governments to develop a research temperament within students from an early age.
- b) The current appraisal system of faculty in higher education is not conducive for research. There are many states that are yet to adopt the Academic Performance Index (API) system for technical colleges. The API gives considerable weightage to research output and

publication in high impact factor journals. Since such measures are not fully adopted, the status quo might not change.

### ***Multidisciplinary Education***

The National Education Policy recommends that all HEIs should eventually be transformed into large multidisciplinary universities and colleges with 3,000 or more students. The curricula of all HEIs should be made multidisciplinary to integrate humanities and arts with science, technology, engineering and mathematics. Such a step will play an instrumental role in developing a rounded and holistic understanding of the world among students. This would also open opportunities for more and more collaboration between students and faculty.

### ***Employability***

In the multidisciplinary education proposed by the NEP–2020, students will be provided internships and research opportunities so that they may actively engage with the practical side of their learning and, as a by-product, further improve their employability. The central government and AICTE have already taken a lead in this direction by mandating internships as part of the engineering curriculum. In addition, tie-ups with internship aggregators and government-supported internship opportunities in urban local bodies is a great step towards leveraging the private and public sectors to increase internship opportunities for students. The following measures may further boost the employability of students:

- a) Creating mandatory credit courses for soft skills, introductory – Information and Communications Technology (ICT), programming and communicative skills as part of the multidisciplinary degree will ensure that every student at any HEI would possess these critical employability traits.
- b) Project-Based Learning should be made a mandatory

part of the curriculum to ensure practical application and appreciation of various disciplines among students.

## **FINANCING HIGHER EDUCATION INSTITUTIONS**

The various recommendations of NEP will require continued financial support to achieve its vision and goals. The Higher Education Funding Agency (HEFA) will play a critical role in meeting the financial commitments for implementing the NEP at this level. However, there is a need to explore innovative financing mechanisms to translate the ideas of NEP on the ground. The following measures may be considered:

- a) One of the untapped areas that can make higher education institutions dynamic and self-sufficient is Public-Private Partnership. Indian Institutes of Information Technology (IIITs) are a great example where the government provides initial capital and operational expenditure for a period of five years. After this, the institutions run on their own by generating revenue through student fees, research consultancy, short-term courses, endowments etc. Many such partnerships need to be forged.
- b) The government recently modified the Viability Gap Funding Scheme (VGF) to include social infrastructure projects, including education. Universities can get funding up to 60 percent as Viability Gap Funding from the central and state governments for greenfield projects. They could get close to 80 percent of the funding as Viability Gap Funding and an additional 50 percent as operational cost in initial years for pilot projects in education. Universities must leverage such schemes to transform their institutions.

## **GOVERNANCE STRUCTURE TO SUPPORT TRANSFORMATIVE CHANGES**

The implementation of progressive ideas recommended in the NEP-2020 may not be possible in the existing governance framework



that drives the higher education system of India. There are issues of conflict of interest where the regulatory bodies also play the role of the academic bodies. Therefore, the separation of functions in the form of four councils viz. i.) National Higher Education Regulatory Council (NHERC) – a single point regulatory body (Excluding Medical and Law); ii.) National Accreditation Council (NAC) for graded accreditation; iii) Higher Education Grants Council (HEGC) for financing and scholarships; and iv) General Education Council (GEC) to frame expected learning outcomes for higher education programmes, as proposed in the Policy will ensure fair, transparent and effective implementation of the reform ideas recommended by the NEP–2020.

## CONCLUSION

The NEP–2020 envisages an unprecedented range of possibilities for the Indian Higher education system that can help restore it to its former glory. The choice and independence offered to Indian students in the form of learning at their own pace, multiple entry and exit options, credit banks and multidisciplinary degrees can be path-breaking initiatives. These initiatives can unshackle multiple and dynamic learning arenas for an agile and ambitious youth. The new India that prides itself on the vivacity of its youth can now have the wherewithal to empower them to carry the country confidently forth in the rapidly evolving knowledge-driven world.

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# HIGHER EDUCATION IN INDIA VISION, PURPOSE, POLICY AND STRATEGY

**Bhushan Patwardhan | K P Mohanan | Tara Mohanan**

*This chapter attempts to redefine the vision, purpose, goals, means, and expected outcomes of higher education aligned to our history, culture, and aspirations, as articulated in the National Education Policy – 2020, and outlines the strategies to be adopted during its implementation to meet our national needs and the global good. We spell out the relation between a vision of the future of India, and educating the young minds as a means to achieve that vision in the next thirty years. The vision and its actualisation need to be aligned to the purpose of education from Kindergarten to PhD. Our primary focus is on Higher Order Cognitive Capacities as mentioned in the National Education Policy-2020. The Essay outlines a model syllabus for General Education as a strand that runs from school to PhD in all types of education.*

## PRELUDE

The principles of access, equity, employability and quality have been central to India's education policies and recommendations since the Kothari Commission Report in 1966 and the first National Education Policy in 1968. Now, looking at this history, we see that even though some progress with respect to access and equity has been achieved, our progress in quality and employability has been hardly satisfactory. The quality of education has been going down steeply, despite best efforts. In our view, the main reason for this is ineffective implementation and insufficient attention to *WHAT* students learn and *HOW* they learn.

Kasturirangan Committee has put forth an imaginative and path breaking recommendations in the National Education Policy 2020 (NEP–2020). In this document, we have tried to augment, enlarge and crystallise few concepts and key recommendations of NEP–2020 to re-imagine and articulate a new Vision, Purpose, Policy and Strategy for actualising necessary reforms in Indian Higher Education by 2040.

## THE VISION

Our vision of future India is that of a vibrant self-reliant nation where citizens enjoy a state of flourishing and well-being in all dimensions of life: physical-biological, pragmatic-economic, intellectual, socio-emotional, ethical and aesthetic. A population in which many people suffer from health problems lacks physical-biological well-being; a population in which a significant subset is poor lacks pragmatic-economic well being; a population in which educated people believe whatever they see in social media suffers from serious intellectual ill-health; a population in which people are absorbed in their smart phone screen and are unable to regulate their feelings of anxiety and stress are socio-emotionally ill; and a population in which individuals feel no remorse for wrong doing and have no consideration for fellow creatures, lack ethical wellbeing. But, going beyond these issues of ill-health, our quest is to enable citizens to have a high degree of fitness in all these dimensions of well-being, and to flourish as individuals and as a nation.

We may view the ultimate purpose of education from pre-school to doctoral programmes as this multidimensional fitness and well-being of the individual, society, nation, humanity and the planet. To accomplish that purpose, it is imperative that we strive for a radically new form of education that paves the way for the succeeding generations to achieve what we have dreamed about. What kind of flagship education will guide our young to travel in that direction? What will help them make India not only the global hub of research, knowledge, intelligence, and innovation, but also

the world leader to help humanity overcome its problems of inequity, absence of safety, hunger, poverty, intolerance, hatred, cruelty, and greed, transmuting our nation into a true leader?

With these underpinnings in place, the vision statement may be articulated as follows: 'A vibrant higher education system grounded in the integrated foundations of modern culture and the Ancient Indian culture that empower learners for a better pragmatic-economic, socio- emotional and intellectual-ethical future for themselves, their country, humanity, and the global good in harmony with sustainable development goals by embracing cutting edge technology'.

To achieve this vision, we need to clearly articulate the goals of education for each of our educational programmes: primary, secondary, higher secondary, undergraduate, graduate and doctoral, in a seamless manner. We need to translate these goals into curricula, which include syllabuses, teaching-learning materials, classroom pedagogies, assessment, and educational policies. A detailed roadmap to move in this direction with a possible set of initiatives and a plan of action is attempted in this article.

## **NATIONAL EDUCATION POLICY-2020**

Broadly speaking, NEP-2020 has two types of recommendations. The first includes the principles of social justice such as access and equity, and employability. The second relates to the quality of education. As stated in the previous section, even though some progress has been made with respect to access and equity, progress in quality has been hardly satisfactory. Admittedly, despite best intensions and efforts, the quality of education appears to be going down steeply. Many a time, documents on education remain as documents, not translated into effective action that influences what students learn and how they learn. This remains a potential danger for NEP-2020 as well. In our view, the main reasons for the limited success in the past include:

## LEARNING OUTSIDE OF FORMAL EDUCATION

*The assumption that higher education can be offered only in terms of a structured university curriculum has been implicit in many attempts at educational reform for a long time. However, it is necessary to acknowledge that the connection to the industry and society at large is an extremely important component of the learning process, which is unacknowledged in the current system. The UGC is currently considering the possibility of revising the broad framework of BA, BSc, and BCom curricula to dedicate one semester of the program to having students (and ideally, faculty as well) go out of campus for their study. Urban students could go to rural areas and vice versa. Such single-semester outreach programs should be suitably structured and creditised so as to offer special incentives to students, both direct and indirect. It is possible to design several innovative ways in which students and institutions can be engaged with the society. One of the potential initiatives along these lines is that of Service Learning (SL).*

- i. Lack of clarity and specificity in the central concepts that describe what we expect students to learn, and the resultant vagueness in working out the implications of these concepts to the design of syllabuses, learning-teaching materials including textbooks and classroom practices, assessment, and educational administrative policies.
- ii. Related to (i), putting the entire burden of raising the quality of education on teachers in classrooms, with very little attention to other factors such as syllabus design, design of teaching-learning materials, pedagogy, student assessment instruments, and policies.
- iii. Absence of a coherent action plan to achieve objectives.

The vision of higher education articulated in the previous section is in harmony with the aspirations spelt out in the NEP –2020, in such a way that it can be translated into reality by 2040, by addressing the challenges of designing curricula and using appropriate pedagogy.

## THE GOALS OF EDUCATION

NEP-2020 elaborates the purpose of education and recommends a number of valuable learning outcomes for India's education system to pursue as its goals. For instance, it states: "... education must develop not only cognitive capacities—both the 'foundational capacities' of literacy and numeracy and 'higher-order' cognitive capacities, such as critical thinking and problem solving – but also social, ethical, and emotional capacities and dispositions." It also recommends certain means which we should adopt to achieve those goals: "Pedagogy must evolve to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centred, discussion-based, flexible, and, of course, enjoyable".

Enlightenment and empowerment may also be considered as important goals of education. Enlightenment can help to create thinking and sensitive citizens of the society. Empowerment may provide means to an educated individual to earn a living as well as to contribute to the economy of the nation. In India, the aspect of empowerment has overpowered the issue of enlightenment.

To translate this vision into reality, the government, state-run agencies, and the various boards of education need to plan carefully, and invest sustained effort. The process also needs the support of parents, teachers and administrators in education, and also citizens with a commitment to the future of the country. We propose a three-pronged approach to bridge the gap between the vision and its implementation:

1. Clarifying the important concepts in the vision statements;
2. Formulating syllabuses that articulate the goals of educational programmes, namely, the learning outcomes we expect students to achieve by the end of the programme, in terms of understanding, abilities, attitudes and habits of mind; and
3. Articulating an action plan for implementing the educational goals in terms of comprehensive learning materials for students (textbooks, videos, and other resources); teaching materials for teachers; guidelines on classroom activities and assessment;

and programmes for teachers to develop the capacity to use the teaching-learning materials.

The goals and means of NEP–2020 can be formulated as follows:

**Goals:** Education must aim to develop in learners higher order cognitive capacities, as well as social, ethical, and emotional capacities and dispositions. Higher order cognitive capacities include higher order literacy and numeracy, critical thinking, problem solving, and inquiry abilities; and an understanding of the concepts along with the core bodies of knowledge relevant to the given programme.

**Means:** The pedagogy must be experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centered, discussion-based, flexible, and enjoyable. To convert these into a feasible action plan, we need to specify the understanding, abilities, attitudes, dispositions, and habits of thought that we expect to empower learners with by the end of each programme. Such specification must have sufficient clarity and detail, so that its implications guide curriculum design: syllabuses, teaching-learning materials, classroom activities, assessment tasks, as well as teacher education for every programme, for each successive year, and for individual ‘subjects’.

The quality of a curriculum is a function of the value of the learning outcomes related to the goals and the effectiveness and efficiency of the pedagogical strategies related to the means to achieve the goals.

## THE CONCEPT OF COGNITION

NEP–2020 requires education to help learners develop cognitive capacities at two levels. The first level involves foundational and higher order capacities. At the second level, it also expects education to develop social, ethical, and emotional capacities and dispositions. ‘Cognising’ is ‘knowing’. Cognitive Science is the study of cognition such as bacterial cognition, plant cognition, human cognition, and so on. It covers such things as perception, attention, recognition, memory, learning, problem solving, and

## LEARNING RESOURCES AND CLASSROOM PEDAGOGIES

*Given the widespread use of Internet learning resources that students have started on their own, and the recent upheavals triggered by the corona virus, it is clear that we need to carefully rethink our paradigm of higher education through class-taught courses. That a significant burden of higher education needs to move into the virtual space has become more of an imperative than ever before. We need to confront that exposition through traditional 'lectures' are not always conducive to or necessary for triggering learning in students. In many cases, they can be replaced by videos, podcasts, and readings already available on the Internet. In many cases, careful curation of such materials from some of the best researchers and thinkers in the world can result in far richer learning than from regular class lectures. There is a treasure trove of learning resources available on internet through YouTube and other sources. If such resources are properly used, the role of faculty members would need to shift from typical 'lecturing' (summarizing and elucidating textbook knowledge) to responding to students' questions on what they do not understand in the learning resources, and engaging in discussions with them to explore further, make connections, and provide further insights, something that the video professors cannot do. In other words, the pedagogy of lecturing needs to be replaced by the pedagogy of flipped classrooms, in which learners use the learning resources instead of classroom expositions for their initial learning, and come prepared to class to ask questions, answer questions, and engage in discussions, using the classroom for consolidation and additional learning. It is high time that tertiary education in India reconceptualised the role of the faculty in higher education, instead of relying on a pedagogy that was best suited to a pre-printing era when even mass printed self-learning resources were not freely available to learners.*

decision-making. Humans share these cognitive processes with other creatures to varying extents.

The higher order cognitive capacities that NEP-2020 expect students to develop may be viewed as those of academic cognition: the abilities of thinking like mathematicians, scientists, philosophers, historians, literary critics, and so on. These abilities need to be grounded in an understanding of the concepts of academic knowledge



and inquiry. Academic cognition is the combination of these abilities and understanding.

Foundational literacy includes the ability to read and write words and sentences. Higher order literacy is the ability to process and communicate academic knowledge through the spoken and written forms of language. Similarly, foundational numeracy calls for familiarity with numbers and the arithmetic skills of adding, subtracting, multiplying, and dividing. Higher order numeracy is essentially the thinking that goes into making sense of numerically coded information. Both literacy and numeracy of the higher order involve cognitive capacities like critical thinking.

A syllabus for primary education needs to specify foundational abilities. However, given that foundational literacy and numeracy are pre-requisites for higher order literacy and numeracy, and the aim of a K–10 programme includes higher order abilities, foundational abilities need not be specified in a syllabus for secondary education. We may view these higher order cognitive capacities as those required in a General Education Programme.

## THE CONCEPT OF GENERAL EDUCATION

The General Education Curriculum (GEC) aims at learning outcomes that are of value to all educated individuals, regardless of specializations, careers, and vocations. The general education strand needs to be common for all the programmes, in suitable proportion. This would empower graduates to acquire the additional attributes needed for employability, and should they choose a path outside employment, gain sufficient capabilities for livelihood, including entrepreneurship. Given NEP–2020, we assume that the GEC would be part of the compulsory education in the K–10, and continued in tertiary education, especially as part of all Bachelor's degrees. We also assume that this strand of the curriculum would take up about 10 percent of the curricular time, effort, and resources.

## THE PURPOSE OF EDUCATION

The quality of the curriculum of any programme is derived from its underlying conception of the ultimate purpose of education. We assume that the goal of the human institution of education as a whole is to nurture those forms of intelligences (information, understanding, skills, abilities, attitudes, habits, and mindset) that are of value to the human species.

Why aim at this goal? Because we assume that the ultimate purpose of education is to empower the young to develop a set of physical, societal, intellectual, economic/pragmatic, ethical, aesthetic, and spiritual (as distinct from 'religious') capacities that enable them to strive for their own well-being and that of others in their community and country, humanity and the planet. Education is one of the most effective means to transform the world into a better place in the spirit of the vision statement given earlier, and of sustainable development goals.

Given this goal and purpose, and the value system underlying them, we need to be clear about the attributes that are essential for an educated individual in order to work for their physical, societal, intellectual, pragmatic, economic, ethical, aesthetic, and spiritual wellness, and to participate in the struggle to make the world a better place. We turn to that question in the following section.

## THE CONCEPT OF AN EDUCATED PERSON

Any attempt to rethink higher education must begin with a sufficiently clear and precise response to the question, "What do we want learners to learn?" This question needs to be discussed and debated at the national level among all the stakeholders of education: students, parents, educators, education administrators, employers, and the government. To ensure that such a discussion does not degenerate into a cacophony of personal opinions, it would be useful to begin with a first draft, and invite others to submit concrete recommendations for addition, deletion and modification, along with the reasons for their suggestions.

## ATTRIBUTES OF AN EDUCATED PERSON

A University-Educated person with 15-16 years of formal education must have the following attributes:

**Independent Learning, Reading, and Communication:** The capacity for independent learning: intellectual curiosity, combined with learning from sources of documented knowledge in the library or on the Internet, independently of teachers and schools. The ability to read, understand, and critically evaluate articles, books and videos meant for educated non-specialists and the capacity to communicate ideas and feelings with clarity and precision.

**Information and Understanding:** Access to the relevant information and the abilities needed for participating intelligently and effectively in a discussion or debate on a public issue, a critical understanding of the evidence and arguments for/against the core ideas of academic knowledge.

**Intellectual Capacities:** The capacity for critical thinking, inquiry, and integration, which includes thinking like a mathematician-philosopher-scientist without requiring specialized knowledge, combined with thinking like a designer-inventor-engineer-doctor-manager-leader-entrepreneur. The capacity to live in the world of ideas and critically engage with them. The capacity to gather data to test an empirical claim. The ability to sift away propaganda, myths, and dogma in the search for truth in an age of fake news. The capacity to reason, and spell out the steps of reasoning, in a variety of contexts. The capacity to make informed rational ethical decisions on the basis of ethical principles shared across human communities. Other cognitive capacities such as perception, introspection, attention, intuition, insight, imagination, memory, and problem solving. The capacity to pursue courses of action to achieve the goals derived from one's value system, and critically examine the rationality of the link between the actions and value system.

**Citizenry:** An awareness of and commitment to one's rights and responsibilities as a member of a community, country, and humanity; a sense of global citizenship and sustainable living. A set of qualities

that come under character, such as honesty, truthfulness, integrity, courage, stamina/grit, and self-discipline.

**The Socio-Emotional Component:** The ability to regulate one's attention and emotions, such that one can engage with life's demands, with unfamiliar situations, and with fellow human beings, in a rational, ethical, and mature way. A set of qualities that characterize a 'good' human being, such as empathy, compassion, consideration for others, gratitude, forgiveness, generosity, tolerance, non-violence, including a commitment to a range of universal ethical values. Emotional maturity that includes the ability to liberate oneself from undesirable emotions like hatred, anger, hostility, irritability, intolerance, cruelty; and to nurture desirable emotions like love, compassion, caring, consideration and respect for others; the ability to accept criticism in a positive spirit; a sense of self-worth and confidence without feeling superior or arrogant; accepting support and offering support where needed, and the capacity for collaborative team work.

**Attitudes and Habits of Mind:** Academic habits of mind such as intellectual curiosity, looking for counterexamples to knowledge claims; detecting logical contradictions; being wary of one's own biases; and clarity and precision of communication. A deep awareness of the uncertainty and fallibility of human knowledge; intellectual humility; a commitment to the values of truth, rationality, clarity, and rigour of thinking; doubting and questioning; and democracy in the exchange of ideas and beliefs, with no place for 'authorities'.

**Beauty:** An appreciation of beauty across different forms and traditions of art, and the ability to defend aesthetic judgments based on shared perceptions and shared aesthetic values.

If we wish to place educatedness at the heart of our higher education, it is crucial that we drastically rethink the nature of our syllabus, assessment practices, classroom pedagogy, and teaching learning materials.

## THE CURRICULUM

A curriculum for an educational programme is the sum total of the educational intervention to achieve its objectives. An ideal curriculum should have the following components:

- A) ***The goals:*** The learning outcomes of the programme related to *WHAT* students should learn. This is specified in the Programme Syllabus, as distinct from the syllabuses of the individual courses that constitute the programme.
- B) ***The purpose:*** The philosophy of education related to the goals and means to address the question *WHY* students should learn what is prescribed in the curriculum.
- C) ***The means:*** The pedagogical strategies related to *HOW* to help them to learn what is expected.

The means in (C) include:

- a. Learning Materials such as textbooks and learning resources, from which students can learn what is specified in the Programme Syllabus,
- b. Teaching Materials such as lesson plans, notes on learning materials, to help the teachers facilitate the learning process,
- c. The activities that teachers employ within the classroom and outside the classroom to guide and facilitate the learning process, and
- d. Assessment tasks to find out if and how well the students have achieved the learning outcomes specified in the syllabus.

The curricula for Bachelor's programmes of the affiliated colleges are normally not designed by the faculty in the colleges, but by the affiliating university. Hence, the successful implementation of the Bachelor's curricula in affiliated colleges calls for a professional development system for the faculty to address (a) - (c) successfully in their classroom practice; and (d) to undertake continuous assessment to supplement the final examinations.

## BLENDDED PEDAGOGY

We should not continue to classify education based on mode of delivery such as campus-based, correspondence, external, distance learning, online, etc. It does not make sense to offer education exclusively by any of these modes. Our education must be provided through blended pedagogy by using the strengths of every mode of delivery. Broadly this can be divided into four parts.

- a) A substantial component of most programmes involves delivery of information. Earlier, 'lecture notes' that gave information to students was their power. Today in the 5G world teachers are not required to do this. Students are much smarter at getting information if they are properly

### WHAT IS PROBLEM SOLVING?

*A PROBLEM is a gap between a desirable state and an existing state; and A SOLUTION is an action or practice that results in an alignment of the two states.*

*The term 'problem finding' denotes the activity of identifying and formulating problems. Problem solving may be defined as the activity that leads to solutions to problems. It involves identifying and formulating the problem, finding solutions, and choosing the best one. And in the case of those that require action, it also involves implementing the best solution such that the problem is removed, or at least, minimized. The first step calls for thinking; the second involves action.*

*Problems can also be those of knowledge (epistemic problems) in the world of ideas, far removed from pragmatic considerations. Academic inquiry and research deal with such problems. Inquiry is the investigation of a question, relying on our own experience, observation, thinking, reasoning, and judgment, to look for an answer and arrive at a conclusion. We inquire because of curiosity — our desire to find out something we don't know, or don't understand. The process of inquiry involves several closely connected parts. It often starts with an idea triggered by reflection, and crystallizes into a question during the process.*

*Rational inquiry is a specific form of inquiry. By 'rational', we mean 'in accordance with reason.' Collective rational inquiry requires us to: identify and formulate the question to investigate; think through appropriate ways to look for answers, and implement them; arrive at conclusions, based on*

*the answers; critically evaluate the conclusions, our own as well as those of others; and justify the conclusions to the satisfaction of the inquiry community.*

*Research is collective rational inquiry that aims to make a contribution to Academic Knowledge. By academic knowledge, we mean bodies of knowledge that come under categories like mathematics, physical sciences, biological sciences, human sciences, the humanities, medicine, engineering, and technology. Academic knowledge is generated and evaluated by researchers, and transmitted to learners through formal education in educational institutions.*

*The solution to a pragmatic problem may require a solution to an epistemic problem. Thus, to look for a solution to the general pragmatic problem of cancer requires us to solve the epistemic problem of the causes of cancer, and use that understanding to develop a course of action. For a doctor to solve a particular problem of the illness of a particular patient, she would need a diagnosis to understand the causes of the problem, and then use that understanding to look for a cure.*

mentored. This component can be handled by creating an online information repository where students can self-learn. Social robots can do this job easily.

- b) Every programme involves a theory component where the available information needs to be used to understand the basic principles of the respective subjects. This can be done by developing high quality MOOCs supported by teachers as mentors.
- c) Understanding the importance of theory requires intense interaction with teachers. This component will have to be in the classroom where the teacher is an active facilitator.
- d) Hands-on/practical/internship/apprenticeship programmes which can happen in campus laboratories/ workshops/ industry sites/any other suitable place.

If we divide the entire teaching of a programme equally into these four broad components, the actual need for ‘Teacher on Campus’ may be required only for about half of the teaching duration of any

academic programme. In the case of non-professional undergraduate programmes the proportion may vary. In any case, we should be able to offer at least 40 percent of the teaching with help from technology, be it online or otherwise. The new Regulation of the University Grants Commission (UGC) allows this. For this purpose we will need an entirely different breed of teachers. This approach may save a significant portion of resources and may substantially reduce the number of academic faculty.

Adopting such a blended approach may have several advantages: First, it may empower students to earn academic credits for component (a) at their own pace and convenience. Second, the quality of education will improve because of a new focus on learning-by-doing in the blended mode. Third, infrastructural needs on the campus may be reduced. Fourth, mass production of poor-quality degrees under the pretext of open/ distance/ online programmes can be controlled. Fifth, access to education will be enhanced due to use of technology in delivery. Sixth, the cost of education will be drastically reduced, making it more affordable.

## INDICATORS OF QUALITY

It is important to remember that while professional programmes like MBBS, BTech and LLB aim at producing professionals in a given field, there are no particular professions meant for those who have undergraduate degrees such as a BA or a BSc in subjects like Physics, Philosophy, Mathematics or History. The graduates in these disciplines may not find jobs that call for specialised knowledge of their principal subjects. Assuming that education ought to prepare learners to meet the challenges that graduates will face in their life after graduation, what do these courses prepare graduates for? A sensible position would be that it helps them to develop an educated mind, such that graduates have the capacity to learn what they wish to learn, or are required to learn as part of their professional obligations; can communicate clearly and precisely; can work productively in teams; are good at critical thinking, problem-solving, and decision making; and so on.



The indicator of the quality of our professional undergraduate programmes would be the percentage of graduates who become high calibre practitioners in their respective fields. The indicator for non-professional undergraduate programmes would be how well-educated they are, regardless of their specialisation. Measuring this capacity would call for developing our own instruments to measure the educatedness of individuals. The indicators of the quality of programmes of higher education are given in Table 1.

**Table 1: Indicators of Quality of Higher Education Programmes**

Type of Programme	Indicators
Doctoral	Number of students from prestigious universities abroad seeking admission to Indian programmes; number of publications and citation index of the graduates after they have graduated; appointments in prestigious organisations
Master's: Research-Oriented	Admission to prestigious PhD programmes
Master's: Professional	Number of high caliber specialist practitioners
Master's in Basic subjects	Number of graduates with specialist understanding capable of innovative application.
Undergraduate: Master's-oriented	Number of graduates admitted to high caliber PhD programmes abroad
Undergraduate: Professional	Number of high caliber general practitioners
Undergraduate: Vocational	Number of accomplished practitioners
Undergraduate: Educatedness-Oriented	The educatedness of the graduates, as measured in terms of a test that probes in the relevant attributes

Making a significant improvement in these indicators should be the primary target for 2040.

## EDUCATEDNESS, EMPLOYABILITY, AND ECONOMY

As stated earlier, enlightenment and employability have been the driving powers of education. In this section, we argue that as far as general education is concerned, empowerment is derivative of enlightenment.

Indeed, expertise in the respective area of specialization is an important consideration for professional and vocational programmes. However, this does not automatically translate as employability. For instance, those who receive degrees in engineering, medicine or management may choose to be self-employed, through private practice, entrepreneurship, or other means of remuneration such as financing, banking, farming, cooking or private consultation. Unless we factor in those who choose these paths, the percentage

### ASSESSMENT

*Towards the end of the 20th century, considerations of objectivity and avoidance of corruption led India to adopt a system of computer-gradable Multiple Choice Questions (MCQs) for Board Examinations, Aptitude Tests, and Entrance Examinations. These MCQ-based tests/examinations are designed such that each question has to be answered in less than two minutes. In some tests, like the Eligibility Tests for school/college teachers, the time available to answer a question is just one minute. Very clearly, such questions leave no space for thinking — let alone critical thinking or creativity — before answering. This form of assessment is deeply flawed in terms of equity, operationalization, and validity.*

*Equity: Given the coaching industry that trains the young to do well in examinations, those who do well are typically from the urban population, and belong to the higher end of the socio-economic spectrum, — those who can afford to pay the exorbitant fees set by the high-end coaching factories. This defeats the entire consideration of equity, because the system discriminates against the poor and the rural.*

*Validity: The validity of measuring instruments (such as achievement tests, entrance tests, aptitude tests and intelligence tests) depends on what the instrument seeks to probe into. To design an intelligence test, for instance,*

*we need to have a clear idea of what ‘intelligence’ is, and a theory of intelligence that connects the abstract quality of intelligence legitimately to measurable atomic attributes.*

*Our entrance tests are designed for high-speed mechanical application and recall of memorized information. They are therefore not operationalized to probe into higher order cognitive abilities such as deep understanding, critical thinking, and innovativeness. In these tests, candidates with the surface smartness to answer questions at high speed without thinking can score high marks. By selecting such candidates, we actively eliminate the thinkers and the creators in India’s student and teacher populations. This strategy guarantees reducing the country’s systems to mediocrity: Einstein, Srinivasa Ramanujan, and Tagore would have flunked these tests and examinations, and would have been denied the opportunity to pursue higher education or teaching.*

*Reliability: As far as we can tell, the validity of these testing instruments has never been investigated, let alone demonstrated. This means that there is every possibility of arbitrariness in the selection for higher studies and for employment. There is a high probability that those who are assigned to the top 1 percent in one test may not score as well in an equivalent test given to them a week later, and that they may end up below the top 10 percent. The reverse is equally probable: someone who falls in the 89th percentile in one test may rise to the 99th percentile in the second test. Given admission criteria set by institutions at, say, 94 percent, selection for admission would be entirely arbitrary.*

*We would like to recommend that all forms of tests and examinations that rely on two minute or one minute MCQs be done away with, and that they be replaced by questions or tasks that call for deep understanding, critical understanding, critical thinking, and inquiry abilities. Such questions, called ‘Enhanced MCQs’ (EMCQs), can be framed in a computer gradable format if we allow for sufficient time for thinking and reflection, ranging from 10 to 20 or 30 minute per question; 10 to 20 options to consider for each question; different options for each question to carry different marks; the need to tick multiple options in order to get full marks for a question; and penalty for picking inappropriate options.*

*To avoid public panic and unnecessary media storms, an assessment reform of this kind will have to be done in a careful, tactful and graduated manner. For this, we recommend the following phases:*

*Phase 1: Identifying a small number of talented academic faculty (say between 10 and 20) who can learn to create EMCQs, and*

*training them in the art and craft of EMCQs.*

*Phase 2: Creating a question bank of a reasonable number of EMCQs.*

*Phase 3: Trying out the EMCQs in aptitude tests of the kind needed for NCERT's Talent Search.*

*Phase 4: Sensitising the students and the public to the need of reform in the nature of assessment, and winning their support*

*Phase 5: Using EMCQs in entrance tests*

*Phase 6: Using EMCQs in final Board Examinations*

of graduates who are employed will not be a reliable indicator of the economic viability of an educational programme.

The bulk of learners in higher education in India are registered in programmes that offer BA, BSc or BCom degrees. Thus, as far as empowering graduates to make a decent living is concerned, our primary consideration ought to be these programmes. Even after factoring in those who choose self-employment, it is widely acknowledged that the majority of even those graduates of our undergraduate programmes who seek employment are unemployable. The population is rapidly increasing and so is the number of educated individuals; however, their skills are not aligned to the changing needs of the society and capacity of the nation to create new jobs. This in turn has been causing educational imbalance.

The solution to this problem is not equipping them with the skills and information needed for particular jobs. In fact, attempting that would be a serious mistake. As NEP-2020 points out, one doesn't know what job one would need to do in the future, and what abilities it would require. A liberal arts education prepares one for a variety of jobs, and transitions across jobs. Such an education is crucial in today's fast changing world. Clearly, our undergraduate education needs careful revamping. However, unemployability is only a symptom of the problem, not its cause. The cause, what makes our system of education dysfunctional, lies in the fact that we mass produce degree holders who are not educated in the real sense of the word.

What does ‘educated’ mean? What distinguishes a well-educated degree holder from a poorly educated degree holder? And what is the difference between a well-trained degree holder, and a well-educated degree holder? The answer lies in the attributes that we have indicated as being those of a generally educated person.

The general education strand needs to be common for all programmes, in suitable proportion. And a well-educated person will automatically have the attributes that make them employable if they choose the path of employment. They would have already acquired enough capabilities to make a decent living through self-employment. This includes a change in our culture, about our attitudes of ‘respectable’ and not so respectable career paths. We need a culture in which farmers, tailors, cooks, cobbler, goldsmiths, wood workers, *tabla* makers, and home makers are as equally respected in society as Indian Administrative Services (IAS) officers, Chief Executive Officers (CEOs), doctors, engineers, lawyers, etc. The undue glamour attached to hollow ‘graduate degrees’ needs to be recalibrated. We need citizens to be well- educated whether or not they have degrees and certificates, whether or not they are home makers or CEOs. If not, our society will continue to be dysfunctional.

As mentioned earlier, unless tempered with considerations of excellence in quality, the pursuit of employability can be detrimental to the quality of education we provide. We may now add that even for employability, the pursuit of educatedness ought to be the primary consideration.

Educatedness is a concretisation of the aspirations of liberal education recommended in the NEP–2020. General Education includes the ideas of liberal education, but goes beyond it in many respects. As the NEP–2020 recommends, we believe that some of the courses in the general education programme can and should be introduced in Professional Bachelor’s Programmes such as BE, BTech, MBBS, LLB, BArch, BPharm, and such.

It is unwise to prioritise one domain of knowledge over another in terms of their practical considerations. All types of knowledge are equally good and important. Undue overemphasis or glamorisation

of particular disciplines such as technology or medicine is conducive neither for education system nor for the society. For instance more focus on STEM (Science, Technology, Engineering, Mathematics) or within science more emphasis on PCM stream (Physics Chemistry, Mathematics) has adversely impacted disciplines of humanities and social science. After independence, our government promoted more number of premium national institutes in technology, management and medicine such as Indian Institute of Technology (IITs), Indian Institute of Management (IIMs) and All India Institute of Medical Sciences (AIIMS), which is good. However, importance of similar stature national institutes in humanities and social sciences should not have been ignored. The creation of unitary institutions and national research laboratories in the higher hierarchy to the universities and continuation of affiliating college system are some or a few other problems of Indian higher education system. A concept of typical Indian Institute of Technology, Indian Institute of Management, All India Institute of Medical Sciences and such has created uni-dimensional individuals with myopic vision or possibly underdeveloped right brain. For a large and culturally diverse society like India, a comprehensive seat of learning with multiple disciplines of knowledge is necessary. The NEP-2020 makes this clear by defining the term University correctly. Making a significant improvement in terms of the quality of education and parameters of educatedness should be an important target for 2040.

## TRANSFORMING THE ETHOS OF EDUCATION

The strategies recommended in the previous sections are bound to create a profound transformation of education in India, all the way from pre-school to doctorate. Thus, the role of the educational culture that these changes are to be located in should not be underestimated. This would mean slow and patient efforts to educate the students, their parents, teachers, textbook writers and editors, education administrators, NGOs, education boards, and policy makers on what these changes represent and how we can affect the cultural transformation needed for the changes. The paradigm of Intelligence-and-Wellbeing-Oriented liberal education is different from the

currently predominant Economy-Oriented formal education, which carry the following axioms on the purpose of education:

- a. ***Economic advancement of the Individual in the view of typical learners and parents:*** To help the young do well in examinations so that they can proceed to specialized higher studies to help them compete in the job market to make a good living
- b. ***Economic advancement of Corporations in the view of the corporate sector:*** To equip the young with the information and skills to make them employable, to serve the manpower needs of the industry
- c. ***Economic advancement of the Nation in the view of the government:*** To develop the human resource needs for the economic progress of the nation.

In terms of the economy-oriented paradigm of education, we see that economic advancement or economic development (often measured in terms of GDP) is economic flourishing, as one of the strands of flourishing. In terms of this general concept, consider the following positions on the purpose of education:

- d. ***Future Flourishing of the Learner:*** To help the young develop the capacity to work towards their biological, material/economic, emotional, intellectual, aesthetic, and ethical flourishing.
- e. ***Future Flourishing of the Nation:*** To help the young develop the capacity to work towards the collective material/economic, socio-emotional, intellectual, aesthetic, and ethical flourishing of the nation.
- f. ***Future Global Flourishing:*** To help the young develop the capacity to work towards the material/economic, socio-emotional, intellectual, aesthetic, and ethical well-being of the planet and its creatures, including humans.

The well-being oriented paradigm of education assigns priority to d-f, but it includes a-c. Within the economy-oriented paradigm, students and parents are concerned only with certificates from

prestigious institutions and programmes, and the grades they are assigned in these programmes. So they often ask about the 'scope' of a particular degree, by which what they mean is - If the students get a degree in X from institution Y, how much money can they make?

Such campus placement-based, salary package-driven education culture may be detrimental to the basic ethos of education.

We need to educate the entire nation to switch from degrees and grades to the quality of learning. Educated people in the true sense have a far better opportunity to pursue their well-being, including economic well-being. The NEP-2020 rightly states that one never actually knows what one's job is going to be in the long term, or what work it will entail. The purpose of a liberal arts education is not simply to prepare for one's first job, but also for one's second job, third job, and beyond. With the coming fourth industrial revolution, and the rapidly changing employment landscape, a liberal arts education is more important and useful for one's employment than ever before. This is what we must help students, parents, and others understand and appreciate, so that they can wean themselves from the culture of Economy-Oriented formal education to the culture of Intelligence-and-Wellbeing-Oriented liberal education. That is going to be a gigantic task.

## INITIATIVES IMPLEMENTED

The University Grants Commission (UGC) has taken a number of significant initiatives to improve the quality of higher education along with promoting quality, access and equity. The ten verticals of UGC Quality Mandate include: Student Induction Programme, Learning Outcomes based Curriculum Framework; ICT in Teaching Learning Process; Life skills; Social and Industry Connect; Evaluation Reforms; Career Progression and Alumni Network; Faculty Development and Mentoring; Strengthening accreditation process, and promoting Research and Innovation. The focus on value based education and respect to environment and sustainability have been strengthened through *Mulya Pravaha* for value education and *Satat* guidelines for sustainable campus.



## THE ANCIENT WISDOM IN THE MODERN WORLD

*What kind of university education can make students become educated? Can we establish contemporary Gurukula University? This is not going to be easy, but if we do not aim higher and spell out each strand of the curriculum, even small improvements would remain unrealised. It is important to unearth the implications of getting outside the box. For instance, suppose a newly setup university were to design an undergraduate programme that:*

- 1) *Abandons ill-conceived and harmful distinctions like physics vs. chemistry or natural sciences vs. 'social' sciences;*
- 2) *Organises the entire curriculum around questions to investigate, (instead of departments and schools);*
- 3) *Devotes the first year to compulsory foundation courses on trans-disciplinary inquiry and trans-disciplinary understanding;*
- 4) *Devotes the second year to compulsory foundation courses on multidisciplinary questions (e.g., who are we as members of the human species? how did the physical, biological, and cultural worlds evolve to be the way they are now? How do we minimise the most serious problems that confront the world today (e.g. violence, poverty, inequity, dissolution of democracy, ...)?*
- 5) *Devotes the third year for preparation for specialisation at the Master's level.*

*The role of a teacher is extremely important in this process. It is necessary to understand the classification of the concepts of teaching implicit in the words for 'teacher' in Sanskrit: Adhyapak: A teacher who merely transmits information; Upadhyaya: One who helps learners connect and integrate fragments of information into knowledge, and develop understanding; Acharya: One who, in addition to these, provides training in a set of skills; Pandit: One who goes above and beyond these and is able to give deep insights in the specialized subject; Drashta: One who brings visionary views, nurtures inquiry and critical thinking; Guru: One who is able to awaken wisdom and shows pupil a way from darkness to light. We note that attributes of educatedness are directly relevant to the classification of teachers in the Ancient Indian system.*

*If we extend the categories from teachers to the entire curriculum design, we may say that we must aim to raise our curriculum from an*

*adhyapak curriculum to a gurukula curriculum. The decision-makers who seek a gurukula education are obliged to permit (1)-(5). It would be valuable to draw out the implications of bringing the ancient categorization to the modern world, to the specifics of curriculum design and educational policies. We are all aware that there was a vibrant and rich pursuit of knowledge, inquiry, and education in Ancient India. It would be of immense value not only to India but also to the world to bring this knowledge system back to the design of modern universities. For this, it is important to introduce university students to the ancient bodies of knowledge such as Panini's linguistics, ancient Indian mathematics and astronomy, ancient medicine, ancient logical systems such as Buddhist, Jainist and Nyaya logics, and so on. But this is hardly sufficient: it is equally important to integrate that knowledge with the modern/western systems.*

*The ancient Indian tradition was not a monolithic one. There were traditions that subscribed to the concept of a creator God, but there were also those that denied the existence of a creator God. Charvaka viewpoints were equally respected. There were traditions that accepted the infallibility of the Vedas as a source of knowledge, but there were also those that rejected it. There were monistic systems of advaita, as well as systems of dvaita that subscribed to the dualism of purusha and prakriti. This culture flourished in an academic ethos of doubting, questioning, disagreeing, and debating, with an awareness of the uncertainty and fallibility of human knowledge and the impossibility of absolute knowledge.*

*Take the following quote: "Whence this creation has arisen – perhaps it formed itself, or perhaps it did not – the one who looks down on it, in the highest heaven, only he knows – or perhaps he does not know." Mandala 10, hymn 129, verse 7. As we see it, the intellectual humility present in this verse is worthy of an Einstein and Feynman, but modern India has replaced it with intellectual arrogance and smugness of certainty. It is important for Education in India to bring back what we have lost, and create an intellectual culture of doubting, questioning, disagreeing, and debating, with an awareness of the uncertainty and fallibility of human knowledge and the impossibility of absolute knowledge, consistent with the view of educatedness.*

Additionally, in line with the NEP-2020 recommendations of liberal education with a multiple-entry multiple-exit mechanism, the UGC is attempting to create a student-centric, flexible, multidisciplinary academic system. The Academic Bank of Credit (ABC) is one such step in this direction. A new Scheme for Trans-

disciplinary Research for India's Developing Economy (STRIDE) to promote quality research by faculty and students has been announced. The UGC has set up a Consortium for Academic and Research Ethics (CARE) to identify, continuously monitor, and maintain a 'Reference List of Quality Journals' across disciplines. The Semester Outreach Programme, Service Learning, Embedded Internship Programmes, Apprenticeships, Work-Linked Education Programmes are some more examples of new initiatives in the advanced stage of implementation.

### A NATIONAL THINK TANK

To think through, oversee, and implement the intended initiatives the government should set up a National Think Tank (NTT), to be responsible for putting together detailed syllabuses, teaching-learning materials, recommended pedagogical strategies, assessment tasks, and policies, grounded in sound educational philosophy, and the cognitive neuroscience of learning.

As part of NTT, a team of high calibre educator-thinkers should be established on priority to develop the Programme Syllabuses, sequenced syllabuses, textbooks, MOOCs, assessment tasks, and teaching resources. The next step would be to select a few highly motivated teachers from the academia across the country, to be trained as mentors to provide value-added help to the learners who need additional help to learn from the MOOCs and textbooks.

It is not necessary that NTT be housed in a centralised building in a capital. We may view this as a distributed network, with members working from different locations, but interacting with one another through the digital channels, and coming together when needed, for face-to-face meetings. We recommend that NTT be composed of different clusters of specialisations, and different layers, ranging from the national, to the state and to high calibre individual institutes and universities.

## CONCLUSION

In this chapter, we have attempted to connect a philosophical vision of the future of India with what learners actually learn, and how teachers help them to learn. Working out that connection with sufficient clarity and precision is an important means to achieve the vision, resulting in a gradual transformation over the next thirty years.

The vision and its actualisation would be mediated through a clear statement of an educational philosophy for the ultimate purpose of institutional education, from Kinder Garten (KG) to PhD. The design of curricula for various programmes need to be guided by that purpose, with the Programme Syllabus clearly spelling out the understanding, abilities, habits of thought and attitudes that we expect students to imbibe through the programme. To achieve the learning outcomes specified by the Programme Syllabus, we need to produce learning materials for students as well as resources for teachers. For the success of the programmes, the assessment tasks need to be designed such that they actually probe into the learning outcomes specified in the syllabus.

At the heart of these proposals is the thrust on Higher Order Cognitive Capacities (HOCCs) mentioned in NEP-2020. What we have presented in this chapter may be viewed as a detailed action plan to achieve those outcomes.

Central to this enterprise is a clear understanding of what we expect of educated citizens, regardless of their specialisation, career paths, or professions. In alignment with this idea, the chapter has outlined a desired syllabus for General Education as a strand that runs from school education to PhD. The programmes of specialised education such as Bachelors in Physics, professional education such as Civil Engineering, and vocational training such as Physiotherapy, need to be built on the foundations provided by the General Education Curriculum.

As part of this enterprise, we have made several specific proposals. One of them involves going beyond campus learning to such paths as learning from curated internet resources, service learning and apprenticeship learning. We also propose a way of unifying the ethos and substance of Ancient Indian knowledge with

the ethos and substance of modern knowledge, using examples from medicine, logic, and philosophy.

Finally, to actualise the vision and linked proposals, we have recommended setting up a NTT as a virtual, multi-sector, multi-speciality think tank to provide extensive professional guidance and oversight.

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*Disclaimer:* The views expressed in this chapter are personal positions of the authors. We have restricted scope of this chapter mainly to scholarly academic aspects and have refrained from discussing the structure and governance aspects. We feel that ‘Structure should follow the Strategy, which should follow Goals and Purpose’ and NOT the other way. We feel that the Laws and Regulations should be primarily based on academic pursuit and not merely to suit administrative, political or economic conveniences. We have tried our best to articulate a global position on higher education that would be of value to India, and at the same time, attractive to the pursuit of higher education outside India, without any intention to either glorify or undermine any historical, geographical, or cultural perspectives. Several terms, concepts and models in this chapter have not been fleshed out in detail due to limitations of space. However, a more elaborate version with extensive examples will soon be available, perhaps with a range of position papers on the different strands briefly mentioned in the chapter.

# NATIONAL EDUCATION POLICY–2020 IMPLICATIONS FOR PLANNING FOR IMPLEMENTATION IN HIGHER EDUCATION

N V Varghese

*The NEP–2020 is framed in the context of a matured educational sector in India. The policy provides an overarching vision and a framework for re-positioning education to the emerging global and national context. It envisages the reorganisation of schools according to the new pattern, focuses on learning outcomes and arrangements for standard setting at the school and higher education levels. It also visualises dramatic changes in restructuring of institutions, programmes of study and flexible pathways to higher learning, and multiple entry and exit points in higher education. In sectors such as education, implementation cannot be measured in terms of quantitative achievement or based only on outputs. The process is as important as the product in the education sector. While the public authorities are entrusted with creating conditions for learning in schools and colleges, the actual teaching learning takes place based on the teacher student interactions and the time invested by the students in learning activities. The real change needs to reach the final consumer of the benefits of the educational reforms – the students.*

## PRELUDE

The National Education Policy–2020 (NEP–2020) recognises the evolving context of education in India while making proposals for changes in the direction of educational progress in the country. While the Policy places Indian education in a global context, it also provides a long-term perspective, reaffirms the importance of public institutions, and argues for increased public funding and granting of institutional autonomy. At the same time, the policy demonstrably recognises the new context of

education being placed in the market with the compulsions of education institutions to respond to the market signals.

The previous education policies of 1968 and 1986 were framed in the context of educational backwardness in India and hence they addressed the issues of expansion of school education and inequalities in educational development; the NEP–2020 is framed in the context of a relatively matured educational sector in India. Thanks to the focus on elementary education and passing of the RTE Act in the past decades, school enrolments at the compulsory levels have reached near universal levels, post-compulsory levels are expanding, and higher education sector has reached a stage of massification. The expansion in the education sector has also brought about two major changes in the context of education development. First, the educational discourse in India has shifted from expanding access to improving quality and learning outcomes at all levels of the system. Second, the education sector has moved away from the traditional model of state reliant and public funded sector to a market mediated model. It is a continuation of the government policy of promoting privatisation, market-friendly practices and student loans in higher education in India (*Bhushan, 2019*). The latter trend is evident more in the higher education sector rather than in the school education sector.

The NEP–2020 envisages the reorganisation of schools according to the new pattern, focuses on learning outcomes and arrangements for standard setting at the school and higher education levels. It envisages dramatic changes in restructuring of institutions, programmes of study and flexible pathways to higher learning, and multiple entry and exit points in higher education. One of the major contributions of the first national policy on education of 1968 was recommending for a common structure of education – 10+2+3 – which continued for more than half a century in India. The NEP–2020 has recommended a new structure, 5+3+3+4, covering the children belonging to the age group of 3-18 years. While it may take a while to move to the new structure, once adopted it may remain as the new structure in the years to come.

The NEP–2020, like any new policy, contains very many new ideas and strategies to promote education in India. The major challenge

of any policy is in the implementation of the policy proposals to achieve the stated objectives. This paper is an attempt to discuss issues related to implementation of some of the policy proposals focusing on higher education.

## TRANSITION FROM POLICY FORMULATION TO ITS IMPLEMENTATION

Any new policy is a statement on deliberate interventions by the public authorities to guide decisions and initiate steps to achieve expected outcomes, leading to the attainment of policy goals. Governments across the world have been adopting ambitious goals and major reforms to re-position higher education to the changed external context and internal conditions of operations. For example, the higher education reforms in the 1980s in many OECD countries focused on moving away from public funded institutions to private financed institutions reflecting the emergence of entrepreneurial universities (*Clarke, 1998*); the reforms in the CIS countries in the 1990s focused on extending support to the transitioning from centrally planned to market economies (*Varghese, 2012*); and reforms in Africa and in the less developed countries focused on the fast emergence of the non-state sector to massify higher education (*Varghese, 2012*). These are examples of reforming higher education to position it to the changed economic and political context.

The New National Education Policy–2020 (NEP–2020) is an effort to reposition education to the changing developmental context globally and in India. The policy provides an overarching vision and a framework for re-positioning education to the emerging global and national contexts. Given the past experience of waiting for 34 years to get a new policy, one may expect that this policy may remain for a fairly long period of time. In any case, many of the proposals in the policy are expected to be valid at least for the next two decades.

The challenge is to design mechanisms to translate the ambitious intentions of the policy into actionable plans to realise tangible outcomes. That is how implementation plans are seen as a follow-up and an integral part of the policy changes. India is now entering



the stage of policy implementation, which is the stage where India's commitment to create logistics' support and the country's management capabilities are being tested.

It is always easier to theorise practices than to develop implementation theories. Theories are generalisation of practices and therefore it is easier to theorise; implementation implies moving from an ideational level to an operational plain and from a generalised practice to context specific interventions. The local contexts are bound by culturally defined norms and practices and the major challenge is in preparing plans with operational autonomy at the local and institutional levels (*Kogan, 2005*). One of the reasons for the failure of implementation of the national policies and centrally sponsored programmes in education in India is the inability of these programmes to be contextualised to the local variations within the framework of the national vision.

Implementation means creating functioning networks where actors, resources and knowledge for translating policy proposals into specific activities are connected. Implementation of a policy involves several steps such as: a) translation of policy goals into targets; b) specification of time frame to achieve the targets; c) elaboration of the targets into programmes; d) institutional arrangements to carry out the tasks; e) involvement of the stakeholders. The transformation/implementation of NEP–2020 proposals into operational practice requires well-articulated implementation plans, regulations by state(s) and the centre to facilitate the implementation process to realise the objectives of the reform measures.

Implementation of the NEP–2020 necessarily involves negotiations with the government and other stakeholders supported by all actors, institutions and resource providers at various levels. India has a multi-level governance and management structure. Therefore, policy implementation involves a process of continuous negotiation among governments at several territorial tiers such as national, state level, district and sub-district and at the institutional levels. The implementation of initiatives at the school level involves negotiation at all spatial levels at the sub-national levels and decentralised levels of educational administration. In the higher

education sector the interactions may be at the national, state and institutional levels since local level authorities do not exercise any authority on higher education institutions located at the district or sub-district levels.

Multi-level governance provides a useful transition from policy proposals to policy implementation as top-down versus bottom-up approaches have been used for both parts of the process (more on this in the implementation section). *Top-down processes* mean that policy decisions from the national level are passed on to lower levels, whereas *bottom-up* processes refer to the involvement of the local level people in policymaking and subsequent impact on higher levels. The multi-level governance in higher education may imply interaction among institutions of higher education, the state and national level regulatory authorities.

## PLANNING FOR IMPLEMENTATION

Planning for implementation implies prioritising targets and ensuring sufficient resource allocation for implementing these priorities. Planning for implementation involves five steps:

- a) elaboration of policy proposals;
- b) identification of implementation agency;
- c) recruitment of personnel;
- d) financial allocations; and
- e) monitoring arrangements.

The first step is an elaboration of policy statements so that the specific action points are identified. This elaboration may have three steps: i) placing the policy goal in the context of the existing situation; ii) an elaboration of strategies to achieve the targets; and iii) the challenges or constraints and ways to overcome the implementation challenges. This requires a good understanding of the issues surrounding the proposal and deep understanding of the empirical and administrative realities to implement the programmes. The National Policy on Education of 1986 prepared a detailed Programme of Action document elaborating most of the policy goals and their operational details.

After the NEP–2020 was released, the government has initiated several efforts to prepare action plans for implementation of the policy at the school and higher education levels. Several expert committees on specific proposals on higher education in the NEP–2020 have been set up and are mostly coordinated by the UGC. Further, there have been recent efforts to establish high level national committees on several fronts to prepare implementation plans at school and higher education levels. The recent efforts to establish high level Committees by the MoE and the UGC on major concerns in higher education are guiding the implementation of several aspects of the NEP–2020. For example, there is a national committee set up on Academic Bank of Credits, one on National Higher Education Qualifications Framework (NHEQF), and another committee on Credit Transfer to promote student mobility and flexible pathways to higher learning. These are concerted efforts to move towards effective policy implementation.

The National Institute of Educational Planning and Administration (NIEPA) in its efforts to support planning for policy implementation has initiated several steps. NIEPA prepared a publication *NIEPA, 2020* which elaborated on some of the policy recommendations and articulated the challenges in the process of implementation of the policy proposals. NIEPA was the Secretariat of the National Committee on Credit Transfer Framework. The Report of the Committee (*NIEPA, 2021*) tried to define credit, and conditions for credit transfer between higher education institutions within the country and between institutions in India and abroad. Following the NEP–2020 recommendation to permit foreign universities to start branch campuses in India, NIEPA recently conducted a survey among the top-ranking universities to elicit their opinion on the possibilities of opening branch campuses in India. Similarly, the NEP–2020 proposes to have flexible pathways to higher education and NIEPA completed a research study on the same theme (*Malik and Narayanan, 2021*). At the instance of the MHRD, NIEPA completed a study (*Varghese, Panigrahi and Rohatgi, 2018*) on the location of higher education institutions and identified areas that were deprived of higher education facilities, which may be reliable sources to discuss the NEP proposal on the issue of institutional consolidation

in higher education. These are ways in which policy proposals can be elaborated on the basis of research and empirical evidence.

A policy statement, in general, is elaborated both in terms of programmes as well as specific projects to be implemented. The link between these project targets and broader national goals ensures the success of policy implementation. What is less understood is that the macro level perspectives have less relevance to those who implement the programmes at the local levels. While the link is necessary, the institutional initiatives are guided more by the activities identified at the local levels than by the macro policy proposals. A necessary step in the planning for implementation is assessing the feasibility of policy proposals after elaborating each of the proposals and overseeing the financial and logistic support the activities will be receiving.

An effective implementation of the Policy needs an implementation agency or agencies at different levels. These may be new agencies established specifically for this purpose or transfer of additional responsibilities to existing institutions. These agencies help translate the policy intents into specific targets and operational tasks, and coordinate resources and personnel to achieve the expected targets. Generally, separate implementation agencies are very common when externally funded programmes are implemented in less developed countries. For example, when India implemented the District Primary Education Programme (DPEP), the largest externally funded programme, the country identified separate implementation agencies and introduced smooth and fast fund flow mechanisms not necessarily through the regular channels (*Varghese, 1996*). It seems new agencies are not created to implement the NEP-2020, although there are efforts to identify departments or institutions entrusted with the responsibility of implementing policies. In other words, it seems that the policy may be implemented through the existing institutions and administrative arrangements. In any case, implementation and its effective monitoring will require an unambiguous demarcation of responsibilities among agencies/institutions and within agencies.

In the absence of creating new agencies or assigning the tasks to specific agencies, policy implementation may get low priority because a large part of the time of the highly placed officials is

taken up on routine day-to-day administration (*Yadav, 2010*). In the absence of delegation of responsibilities to the lower level units, the implementation process will become too centralised leading to routinised administrative processes and procedures. Very often than not, it may lead to a situation of continuing with the traditional responsibilities and positive effects of policy not being realised at the local level. The frequent changes in the political and administrative leadership within the education sector at the national and state levels may lead to discontinuities in the momentum picked up during the process of implementation.

Recruitment of personnel for policy implementation is an equally important aspect of policy implementation. There are two types of personnel recruitment. First, it is possible to depute officers from the existing cadre from other departments. The second may be recruiting new personnel. The government may not always be willing to assume responsibility and extend financial support for the new appointments or for creation of new posts. Under such circumstances, the options are confined to recruiting of staff on a project mode or rely on deputation modality.

Experience has shown that the sustainability of the newly initiated activities is better protected when new staff members are recruited on a regular basis. The experience in the implementation of major projects in India is that the investment made and capacities created during the project period are not sustained after the project period since the staff are transferred back to the parent departments or terminated if recruited in a project mode. One of the major reasons for the regular demand for capacity development whenever new programmes come up is the short-sighted measures of engaging the responsibilities of policy implementation to project staff or staff on deputation.

Another concern in policy implementation is in terms of the financial allocations to implement the policy proposals. At times, policy decisions are made without adequate analysis of costs of translating ideas into operational practices. The prioritisation indicated in the policy may not be reflected in the budgetary allocations. For example, many expected that there will be a substantial jump in the budgetary

allocations for education in 2021 to accord an added emphasis on the implementation of NEP-2020 proposals. However, the allocations to education in 2021 budget did not reflect these priorities or enhanced allocations for education. Another aspect of resource allocations is targeting the public resources according to the priorities of the policy. This can be done more effectively if the institutions have a better say in the allocation decisions.

Monitoring the implementation activities is another important step. Monitoring can be effective only when the activities to be carried out are clearly defined and the agency/individual to carry out the tasks are specified. The frequency of reporting is an important step to establish an orderly monitoring process. In sectors such as education, implementation cannot be measured in terms of quantitative achievement or based only on outputs. The process is as important and the product in the education sector. While the public authorities are entrusted with creating conditions for learning in schools and colleges, the actual teaching learning takes place based on the teacher student interactions and the time invested by the students in learning activities. The real change needs to reach the final consumer of the benefits of the educational reforms—the students.

Many a time, the lesser developed countries are criticised for lack of managerial capacities at the local levels to successfully implement programmes. This leads to unpreparedness in the field and poor implementation of the programme. The field level functionaries are seldom taken into confidence in determining policies and programmes; nor do they possess an appreciation of the overall plan or objective.

## **SOME POLICY PROPOSALS AND IMPLICATIONS FOR THEIR IMPLEMENTATION**

### ***From Massification to Universalisation***

The approach to development of education in India traditionally has been universalisation of elementary education, expansion of secondary

education, and consolidation of higher education. Unlike the NEPs of 1968 and 1986, the NEP–2020 recommended for an expansion of higher education sector in India. It made a welcome recommendation for a fast expansion and universalisation (GER of 50 percent) of higher education by 2035. Based on the GER levels when the policy was framed, this target implied almost a doubling of the GER from 26.3 percent to 50 percent within the next 15 years! The increment to GER experienced between 2019 and 2020 was only 0.8 percentage points from 26.3 to 27.1 percent (*MHRD, 2020*).

The GER at the national level needs to increase at least by 1.6 percentage points annually to reach the target of 50 percent by the year 2035. In other words, the average annual increase in GER needs to double from the gains experienced in the recent years. This is almost an impossible task at the macro level. However, this target is easily achievable in some of the states. For example, Chandigarh with a GER of 52 percent and Tamil Nadu with a GER of 51.4 percent have already surpassed the 2035 target in 2020–21; Delhi with a GER of 48 Per cent and Puducherry with a GER of 46.4 percent are fast approaching the target well ahead of the expected date. There are at least 10 states with a GER of more than 35 percent which may achieve the target by the year 2035. However, the target seems to be almost impossible to achieve for states such as Bihar with a GER of 14.5 percent and Assam with a GER of 17.3. It may be realistic to assume that unless targeted intervention measures are not adopted, the policy goal of universalisation of higher education may remain as a distant dream in majority of the states of India.

The transition rate from secondary to higher education level is high even in educationally less developed states. Therefore, unless school education is sufficiently expanded in the these states, the national goal of universalisation of higher education may not be realised. One of the first steps needed is to undertake an analysis of enrolments in higher secondary education and the stage transition ratios between higher secondary and higher education. In those states where GER at the higher secondary level is low, the public initiative are needed for expanding enrolments at that level. The districts or locations where stage transition ratios are low, one needs to look into the

distribution of higher education facilities in the same and nearby localities. In other words, a mapping exercise to facilitate a better locational planning of the higher secondary and higher education institutions at the district level will help in identifying areas where public investment needs to be prioritised. In fact, NIEPA undertook an exercise (*Varghese, Panigrahi and Rohatgi, 2018*) to identify and prioritise the locations where higher education institutions were to be established to promote fast expansion of the sector with equity.

### *Flexible Pathways for Higher Learning*

The new directions of change in higher education globally point to flexible pathways to higher learning (*Malik and Narayanan, 2021*). The NEP promotes flexible pathways to higher learning. The system will promote 4 or 3-year undergraduate degree programmes and one or two-year Master's programmes. The system will permit multiple entry and exit options with appropriate certifications – a student at the undergraduate level can get a certificate at the end of one year, a Diploma at the end of second year and a Bachelor's degree at the end of the third year. The preference, however, will be for the four-year multidisciplinary education at the undergraduate level. The universities will offer one-year Master's degree to those students who have completed four-year undergraduate studies and two-year Master's degree to those who completed three year undergraduate studies. Students with the four-year undergraduate studies with focus on research can be admitted directly to doctoral studies (PhD) since MPhil study programmes will be discontinued.

The restructuring of institutions will have an impact on curriculum restructuring and flexibility of curricular choices for students. This will be a big move towards introducing flexible pathways towards higher learning. The flexibility will also work well when institutions move towards a credit system and credit transfer that would be permitted between institutions. As part of the implementation and flexible arrangements for higher learning, the MoE has constituted a national committee on credit transfer, UGC has constituted a committee on national higher education qualification framework (NHEQF), and another one on Academic Bank of Credits (ABC).



Once these committee reports are finalised, credit transfer between distance learning and face-to-face programmes, departments within universities, and between universities promoting student mobility will become an important part of the higher learning in India.

One of the important changes during the Covid period has been a transition from face-to-face teaching-learning to online modes. This transition has already introduced many elements of flexible learning in higher education. It is expected that some of these elements may remain even after the pandemic period is over. In other words, online learning, blended learning, and flipped classrooms will become common practices in higher education in India.

### ***Institutional Consolidation***

One of the important recommendations of the NEP–2020 is to transform existing institutions into large multidisciplinary universities and colleges offering undergraduate and graduate studies. Institutions will be classified into research-intensive universities, teaching-intensive universities and autonomous degree granting colleges, focusing on teaching undergraduate students. The autonomous degree granting institutions can eventually develop into Research University, Teaching University and Multidisciplinary Autonomous College-to develop world class Multidisciplinary Education and Research University (MERU).

Another related recommendation of the NEP–2020 is to phase out small colleges and ensure a minimum of 3000 student enrolments in any college. As of 2019, nearly 6.5 percent of the colleges have an enrolment of less than 500 students; nearly 92 percent of the colleges have less than 2000 students and only 4 percent of the colleges have more than 3000 student enrolment (*MHRD, 2019*).

Implementation of this proposal however may face difficulties on many counts. First, many of the small sized colleges came into existence as a result of the equity-oriented policies of the government. The government encouraged establishment of higher education institutions in rural areas to improve access, especially to the disadvantaged groups and girls. This was important since the

private sector was more incentivised to establish higher education institutions in urban areas. Second, some of these institutions are mono-discipline institutions and turning them multidisciplinary may not be viable from the investment point of view. Third, many of the single discipline institutions are private higher education institutions. Institutional consolidation when institutions have been operating under different managements is indeed a difficult task. Therefore, the implementation of this proposal to have large multidisciplinary higher education institutions will face challenges based on the feasibility from the points of view of social demand, equity and financial viability. At time, efforts towards institutional consolidation especially in the rural areas may lead to increasing inequalities in terms of access to higher education.

### *Quality and Accreditation*

The NEP-2020 accords high priority to enhancing the quality of outcomes at all levels of education. The emphasis on learning crisis at the school level and the wide variations in levels of learning achievement observed among schools is a matter of serious concern. The low quality of our higher education institutions and poor quality of learning among the graduates are important points of discussion, especially after the rankings have begun in this century and the results of which are published annually.

It is a fact that Indian universities do not appear in top positions in the global ranking of universities even though there have been efforts to establish world class universities in India—20 institutions of eminence (10 in the public sector and 10 in the private sector). India started its own rankings through the National Institutional Ranking Framework (NIRF) in 2015 and the results have been published every year since 2016. These are the initiatives manifesting our aspirations to become an important player in higher education at the global level.

The NEP-2020 envisages to reorganise the accreditation procedures. It emphasises on the need for accreditation and external quality assurance mechanisms, and effective functioning of internal quality assurance mechanisms. The approach to

accreditation as envisaged in the NEP–2020 is different from the existing arrangements. In place of a single accreditation agency such as NAAC, there will be multiple accreditation institutions to assure quality in higher education. The role of NAAC will change from accrediting institutions to accrediting multiple accreditors by issuing licenses to accreditation institutions. Further, the grading while accrediting institutions will disappear eventually and it will be replaced by binary categorization.

The NEP–2020 considers setting up a meta-accreditation agency called the National Accreditation Council (NAC). The NAC attempts to create a set of accreditors at the regional level. It will accredit the accreditors (the decentralised or regional accreditation agencies) to create a pool of or an ecosystem of accreditors. This may imply creating capacities at the state level to carry out the external quality assurance arrangements and accreditation procedures. The state councils of higher education may be a reliable organisational arrangement to facilitate this process provided they are strengthened to carry out accreditation functions effectively.

Another related area is to create a National Higher Education Qualifications Framework (NHEQF) outlining the learning outcomes associated with degree/diploma/certification, which shall be the guiding document for curriculum development across all disciplines and fields of study in higher education. India has already established the National Skills Qualifications Framework (NSQF) in 2013. The NHEQF needs to be consistent with the framework provided by the NSQF. As discussed in the earlier paragraphs, the UGC has already setup a committee to develop a framework and a detailed plan for NHEQF. The NHEQF will become the basis for developing curriculum and study programmes in the colleges and universities.

Another proposal in the policy is the need for linking research and teaching not only in research universities but also in all types of higher education institutions. To promote research, the NEP–2020 envisages setting up of a national research foundation (NRF) through an Act of the Parliament with an annual grant of Rs. 20, 000 crores. It will be an autonomous body to fund research in all disciplines across public

and private universities and colleges. The funding through NRF will be in addition to the existing funding by various agencies through competitive peer-reviewed grant proposals.

### ***Governance of Higher Education***

The NEP-2020 recommends dramatic changes in the governance and management of higher education. The new governance structure suggested has implications for reorganising governance and management at national, state, and institutional levels. At present, the higher education sector has more than fifteen regulatory bodies. The era of ‘disjunction of regulatory efforts by the multiple regulatory agencies’ (*NEP, 2020, p. 47*) may come to an end and the governance efforts will be organised under one umbrella organisation, namely, the Higher Education Commission of India (HECI). HECI will have four independent verticals with distinct responsibilities for regulation, accreditation, funding and academic standard setting. It is expected that the NHERC will be responsible for regulation, the NAC for accreditation, HEGC for funding and GEC for academic standard setting.

The single point regulator for all domains except medical and legal education may help in reducing, if not eliminating, the duplication activities carried out as of now. It is expected that National Higher Education Regulatory Council (NHERC) will be set up to make governing higher education more unified and integrated to ensure ‘light but tight’ regulations.

The second vertical is for quality assurance and accreditation. A meta-agency covering all categories of higher education institutions will be autonomous with the freedom to develop their own courses and study programmes. A General Education Council (GEC) will be set up for defining expected learning outcomes or graduate attributes. The curriculum in higher education will be reorganised to take into account the possibilities of enhancing employability skills of university graduates. The standard setting functions will be performed by the Professional Standard Setting Bodies (PSSBs). All the professional bodies will be part of the PSSB.

NEP–2020 envisions the university as an autonomous structure with an empowered structure of governance at the institutional level. The idea of institutional autonomy within the framework of graded autonomy is one of the recommended governance forms. The policy proposes an empowered structure of a Board of Governors for each higher education institution. The members of the BoG will be identified by a Committee appointed by the BoG. The heads of higher education institutions will be appointed by the BoGs through an impartial merit-based process led by an Eminent Expert Committee constituted by the BoG. Institutional development will be based on an institutional development plan prepared by each institution through a participatory process which will include the BoG members, head of the institution, faculty members, and students.

## CONCLUSION

The NEP–2020 envisages major changes in the education sector, which include a transition from massification to universalisation of higher education, institutional consolidation, multidisciplinary education, flexibility of pursuing higher education, and a total overhaul of the governance framework and regulatory arrangements. While these proposals are encouraging, the challenges lie in the implementation of these proposals. As discussed in this paper, each proposal needs a careful analysis, elaboration of the proposal into operational activities, identification of agencies, and individuals to undertake the responsibilities as specified by the operational details.

The NEP–1986 was followed up with the Programme of Action document which detailed out the activities to be taken up in the process of implementation. Such an exercise will help in specifying activities and responsibilities and will be useful in monitoring the progress of the programmes and activities, and eventually the implementation of the NEP–2020. Unless we have some detailed planning and a prepared plan for implementation, many of the proposals may remain as unrealised goals. The effective implementation and successful achievement of

the policy goals demand financial allocations and human resource support in a well-organised institutional framework.

Some of the public initiatives and reform measures fail primarily because the system depends upon inefficiently run institutions to implement new initiatives. Unless the implementing institutions are revitalised or new institutions are created with adequate financial and human resources, the very many ideas contained in the policy may remain at the ideational level only. Translation of these ideas into operational practices need new energy to be created in the system through improving the effectiveness of existing institutions. This may remain as the major challenge for the implementation of NEP-2020. The policy recommends that an increase in government funding of education to the tune of 6 percent of GDP. This is nothing but a restatement of the proposals of the 1968 and 1986 policies. One is not certain whether or not such allocations will be made on the one hand and whether or not such allocations, if made, will be sufficient. Relying on weak institutions is not an effective strategy for successful implementation of the policy. In other words, the policy implementation deficits will be a result of the absence of a reliable institutional framework to harness human and financial resources towards achieving the goals indicated in the NEP-2020 and the targets specified in the implementation plans.

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# THE SPIRIT OF THE NATIONAL EDUCATION POLICY-2020 THE POLE STAR FOR IMPLEMENTERS

**Leena Chandran Wadia**

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## PRELUDE

In the months since the NEP-2020 has been made available to the public, widespread discussions and debates on all aspects of the policy have been taking place throughout the country. It is generally acknowledged that the policy is a transformational one, capable of delivering the necessary changes to the Indian education system. The Indian youth constitute one of the youngest populations in the world (SRS, 2018), and the NEP-2020 can enable them to realise their potential as a workforce, not just for their own benefit and that of their families, but also that of society, the economy, and the country as a whole. The Prime Minister has been exhorting everyone to seize the opportunity to turn the new decade into India's decade.



However, it is also apparent that the transformative potential of the policy cannot be leveraged by students unless all empowered stakeholders in the system – managements of higher education institutions (HEIs), faculty members and staff, decision makers in governments both at the Centre and in the states, and all regulating and professional standard setting bodies – imbibe the spirit of the Policy and collaborate towards creating the flexible, responsive, yet integrated higher education system that can cater to the interests and aspirations of individual students. Successful implementation of the policy calls for leadership at all levels, by educators and educationists, managements of institutions, and most of all by motivated faculty members who are willing to lead the transformation.

### **NEP–2020: A COHESIVE POLICY AND ITS CHALLENGES**

The challenges facing the Indian higher education system are well known and well documented in multiple reports prepared by expert committees and researchers (*NKC, 2009*), (*YPC, 2009*), (*DNEP–2019*), and (*Wadia and Shamsu 2020*). These include: i) the extreme fragmentation of our educational institutions with as much as 64 percent of our colleges enrolling less than 500 students (*AISHE, 2019*); ii) the early specialisation and streaming of students into disciplinary silos; iii) persistent challenges of access to higher education for many groups of disadvantaged students; iv) the lack of institutional and faculty autonomy; v) the relatively unattractive working conditions and career progression of faculty; vi) the neglect of research at universities and colleges; vii) poor governance and leadership of HEIs, both public and private; and viii) a regulatory system that has unfortunately stifled innovation and creativity rather than encourage it (*DNEP, 2019*). The NEP–2020 has taken cognisance of these challenges and put forward a comprehensive and cohesive policy that addresses all of them. The difficulty with implementing the Policy, however, is that it describes the vision for the future higher education system of India in vivid detail but does not prescribe the pathways for realising the vision. The policy leaves it to the leadership of HEIs, supported by their

faculty members, to chart their own individual pathways towards the transformed higher education system envisaged in the policy. The task of dismantling the old reality and constructing a new one poses considerable challenges and will not be easy to accomplish. This article argues that the compass that can guide implementers every step of the way is a keen understanding of the spirit of the policy. It illustrates how the spirit of NEP–2020 can help to make appropriate implementation choices.

Although most of the recommendations in the DNEP–2019 have become part of NEP–2020, there are two key recommendations that have not been accepted. These include: i) the suggestion to create a new National Education Commission (NEC) or the Rashtriya Shiksha Aayog (RSA) in DNEP–2019. Its role has instead been assigned to a strengthened Central Advisory Board of Education (CABE) in NEP–2020; and ii) the suggestion in DNEP–2019 to have professional councils continuing to regulate professional practice but giving up their regulatory role with regard to educational institutions and education in the respective professions, has not been accepted in the case of legal and medical education.

## **THE SPIRIT OF NEP–2020: A KEEN FOCUS ON STUDENTS**

The NEP–2020 is centred around students – their abilities, their interests, and their aspirations – and the policy seeks to create an enabling and flexible framework that HEIs can make use of to support each individual student. “It is based on the principle that education must develop not only cognitive capacities - both the ‘foundational capacities’ of literacy and numeracy including scientific, ICT, financial, and cultural and civic literacy, and ‘higher-order’ cognitive capacities, such as critical thinking and problem solving – but also social, ethical, and emotional capacities and dispositions” (*NEP–2020*). The policy therefore emphasises multidisciplinary education that provides students with considerable choice across subjects in the Arts, Humanities, Social Sciences, and Sciences, and also includes Sports, Vocational and Professional subjects.

In this spirit, it becomes natural for HEIs to offer the new four-year undergraduate program (FYUP) that creates the space for students to explore their interests and to acquire a broad-based liberal education that gives them the exposure and the perspective they need, for life and for citizenship. This is in line with the aim of the policy of “producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our Constitution” (*NEP–2020*). Naturally, HEIs will have to assist students with exercising their choices and with making the best of such opportunities by providing them with career counselling and guidance. HEIs in turn are empowered by the policy to enable student choices to the maximum extent possible, particularly through the Academic Bank of Credits which enables the sharing of courses within and across institutions, both public and private. Student choices must also be made available, to the extent possible, within the 3-year undergraduate programme. The latter has been retained by the policy, keeping in mind the need for flexibility of options for HEIs as well as students, particularly those who have concerns about affordability. *NEP–2020* also enables cluster approaches to providing multidisciplinary education that commits to setting up model, public, and Multidisciplinary Education and Research Universities (MERUs) that will aim to set the highest standards for multidisciplinary education in India.

The provisions in *NEP–2020* for equity and inclusion beyond the regular provisions for affirmative action include :i) the introduction of special education zones, particularly in the aspirational districts, to balance the disadvantages due to geography; ii) the option for HEIs to offer higher education in Indian languages for students who have completed school education in the vernacular medium; as also iii) a ‘Gender-Inclusion Fund’ to combat the systematic dropouts observed among women across all categories (*Varghese et. al. 2019*); among others. HEIs on their part, the bulk of whom are in the private sector, are being supported and urged by the policy to appreciate the power of inclusivity and diversity within a classroom to enhance the quality of education, and to provide scholarships for up to 50 percent of students. The multiple entry and exit option introduced in the policy will also support students who have dropped out for either

financial or social reasons, by giving them an opportunity to return to their studies at a later time. In the long term, lifelong learning will be enabled for youth and adults across all disciplines through the multiple entry and exit option coupled with the Academic Bank of Credits, and the provisions for vertical and horizontal mobility across disciplines, enabled through the defining of a National Higher Education Qualification Framework (NHEQF) suitably intertwined with the existing National Skills Qualification Framework (NSQF 2013).

The Policy relies on HEIs and their faculty members to inculcate critical thinking, problem solving, collaboration, communication, and several other 21st century skills through the exploration of alternative pedagogies involving learning by doing, teamwork etc., and through the integration of vocational education. Such an approach is consistent with the spirit of the policy of empowering students and helping them explore their abilities and interests in a holistic manner. Providing vocational education through HEIs has the potential to not just provide jobs to students and contribute to the economy, but also to bring HEIs closer to the industry and to their communities, valuable connects that are either weak or non-existent at present. With the advent of Industry 4.0 and emerging technologies such as robotics, nano technology, quantum computing, internet of things, autonomous vehicles and so on, the traditional distinction between white-collar work following university education and blue-collar work following vocational education has blurred considerably, a development that will help combat the mindset prevalent today about vocational education being inferior or a lesser priority. A report by the Ministry of IT, Government of India, called out a USD 1 trillion digital opportunity for India which led to NASSCOM partnering with the government to launch India's digital skilling platform Future Skills Prime on November 18, 2020 (*Wadia and Dabir, 2020*). That vocational education is seeing considerable uptake from students is clear from the fact that the Bachelor of Vocation (BVoc) degree launched by the UGC in 2013, to provide vocational education and skill development as part of college/university education, has grown from an initial list of just 127 colleges approved in 2014 to nearly 1000 as of the

academic year 2020-21. Some innovative models for BVoc have also come to the fore such, as that of the School of Vocational Education at the Tata Institute of Social Sciences (TISS), Mumbai, and of the Dayalbagh Educational Institute, Agra, among others (*Wadia and Dabir, 2020*). More HEIs can come forward to devise innovative and effective ways of partnering with industry for their mutual benefit and for the benefit of students.

## POSTGRADUATE EDUCATION, RESEARCH AND THE EMPOWERMENT OF FACULTY MEMBERS

Masters and PhD programs in the country suffer from low enrolments, just 10.81 percent and 0.45 percent respectively (*AISHE, 2019*), and many are not of very high quality. The consequence is that faculty members in higher education, most of whom are inducted after their Masters' degree, do not receive adequate pre-service training that covers training in pedagogies. Induction training for new faculty by the HEIs themselves is also relatively rare, so training of teachers relies mainly on faculty development programmes. Given that most Masters' programmes in the country does not have a research component, many faculty members also do not have training and experience in conducting research. The emphasis of the new National Research Foundation (NRF) announced on capacity building within the university system in NEP–2020, is therefore very natural and represents a huge opportunity for faculty members to take advantage of the mentoring as well as the research funding that the NRF will provide, for meaningful research.

Neither innovations in teaching nor leveraging of opportunities for research can occur without conducive working conditions for faculty members. These include freedom from contract work, decent wages, and the autonomy to exercise their own judgement with regard to curriculum, pedagogy and assessment of students. The clear signal sent out by NEP–2020 – of phasing out the affiliation system and providing graded autonomy to colleges – will in time return the responsibility for quality education into the hands of the faculty members. HEIs that recognise this fact and invest in

their faculty members will be able to compete successfully among their peers to attract students. Faulty members in turn will have to take the initiative to create a vibrant learning environment for students. Their efforts must be supported by the managements through the adoption of a performance evaluation system that gives credit to faculty members not just for teaching and research but also for their contributions to the development of the institution (through fund raising, consulting, etc.) and to the well-being of students (through managing clubs, hostels etc., and overseeing other activities). Best practices with regard to cultivating excellence through autonomy and using enlightened methods of evaluating faculty exist already, as for instance in College of Engineering, Pune (*Wadia and Sivakumar, 2015*). These practices can be used as starting points by other HEIs for developing standards suited to their own conditions.

The world over, there are only a few ways to finance education. These include: i) philanthropic grants that are either outright grants or those that contribute towards the creation of corpus funds whose yields pay for education related expenditure; ii) grants from governments; iii) fees paid by students; iv) contributions by faculty in the form of revenues from consulting, from research grants, and from executive education and lifelong learning courses; v) revenues from stakes in companies incubated at the institution; and lastly, as a newer trend in many countries; and vi) revenues from the higher fees paid by large numbers of international students. In India it is only, item (iii) the revenue from student fees, that sustains most institutions, besides limited grants from government for research. With more autonomy going ahead, faculty members at HEIs can play a critical role in helping to raise additional funds for their institutions through: i) bringing in research grants which generally carry overheads for the home institutions; ii) bringing in funds through consulting to industry and to governments; iii) introducing new and innovative courses for lifelong learners; and iv) by incubating start-up companies in collaboration with students and colleagues. These activities are relatively common in many developed countries and need to be grown in India in an organic manner.

## GOVERNANCE AND REGULATION OF HIGHER EDUCATION INSTITUTIONS

Complete autonomy for a large number of good-quality HEIs was the key lever for innovation envisaged in DNEP–2019. The NEP–2020 has modified this recommendation and opted for graded autonomy, beginning with academic autonomy, as a matter of abundant caution. However, it is also important to keep in mind that in many situations such as the procurement of equipment for laboratories for instance, it is difficult for HEIs to exercise academic autonomy without financial autonomy. If a large number of HEIs can be given operational autonomy in the coming years – based on their accreditation scores – they will be able to invest in their faculty members, launch new courses, increase their intake in existing courses, encourage research, innovation and entrepreneurship, and so on. The NEP–2020 has stipulated that HEIs be run by Boards of Governors consisting of eminent individuals and alumni who are committed to education and to the institution. This will ensure that vice chancellors receive considerable support, academically and administratively, in running their institutions.

Since autonomy will be granted on the basis of excellent accreditation scores, the infrastructure for accreditation will have to be scaled up considerably so that every HEI is accredited at least once every five years. This will mean that many excellent educational institutions will have the opportunity to become independent Accreditation Institutions (AIs) that will work under the supervision of a meta-accrediting body, the National Accreditation Council (NAC), renamed from the present National Accreditation and Assessment Council (NAAC). Such a move will help AIs generate revenue for themselves. NAC may choose to use e-assessments as a preparatory step, prior to accreditation by AIs. If sufficient numbers of competent AIs can be identified, the desired goal of accrediting every HEI at least once in every five years will become attainable. NAC will need to ensure that AIs are not in conflict of interest with the institutions that they accredit.

The principle of separation of roles in governance and regulation adopted in DNEP–2019 required that the functions of regulation,

accreditation, funding, and academic standard setting be entrusted to separate, independent, institutions. The NEP–2020 has instead made them independent verticals under an umbrella organisation, namely the Higher Education Commission of India (HECI). This is likely to be a better solution given that the synergies between these four functions can be better exploited, but it is also critical that the independence of each institution is maintained. A very important commitment in both DNEP–2019 and NEP–2020 is to keep regulation minimal and cede more autonomy to HEIs. It is expected that regulations will be made more effective through the use of technology to enforce transparent disclosure norms, relating to key information regarding the health of HEIs that is of value to students, parents and the public. The HECI is one of the most awaited pieces of legislation that is expected this year. In the meantime, existing regulators such as the UGC, AICTE, NCTE and the professional councils must begin preparing for the new regulatory approach by dismantling some of the excessive controls that exist at present. NAAC will need to prepare for its larger role as a meta-accrediting body by working out the processes that it will adopt towards ensuring the smooth functioning of the network of new accreditation institutions.

DNEP–2019 sought to ensure that the professional councils, which are membership organisations of practicing professionals such as doctors, lawyers etc., do not impinge on the autonomy of the faculty members at professional colleges. While they can continue to regulate their professional practice, DNEP–2019 expected these councils to allow faculty members, who are independent professionals in their own right, to function autonomously. This was a subtle change in the role envisaged for professional councils. The professional councils were to become Professional Standard Setting Bodies (PSSBs) that specify ‘graduate attributes’ in their respective disciplines. The HEIs and their faculty members would then use these guidelines to design curriculum and ensure delivery so as to help in achieving the professional standards laid out by the councils. Of course, such a transition would only take place gradually, over a period of time, as more colleges offering professional education become autonomous, leading to these autonomous colleges and universities offering



general and professional education as envisaged by the policy. A multidisciplinary approach would enable collaborative research between researchers in Medicine and Engineering for instance, something that is not very prevalent in the country today but is sorely needed for the design and development of medical equipment, an industry worth USD 156 billion in the United States way back in 2017. The NEP–2020 has however kept the regulation of education in medicine and law unchanged for the present, and outside the purview of its reforms. It may be worthwhile to review this decision in some years.

All HEIs need to be supported with an appropriate, supportive, legislative, and regulatory environment that enables them to achieve the goals set by NEP–2020. This requires the governments at the centre and the states to create the necessary, conducive and responsive, legislative and regulatory regime, providing adequate funding, and monitoring towards quality control and smooth implementation of the policy.

## **MONITORING AND QUALITY CONTROL FOR SUCCESSFUL IMPLEMENTATION**

As mentioned earlier, the NEP–2020 replaces the National Education Commission (NEC) recommended in the DNEP–2019 with a remodelled and rejuvenated Central Advisory Board of Education (CABE). It is therefore worthwhile to examine the roles that were envisaged for the NEC since these must now be used as inputs to remodel CABE.

As stated in DNEP–2019, “NEC will be responsible for developing, articulating, implementing, evaluating, and revising the vision of education in the country on a continuous and sustained basis. It will also create and oversee the institutional frameworks that will help achieve this vision”. The NEC was therefore meant to be a policymaking as well as implementation body that would oversee the implementation of NEP–2020 over the projected two-decade long lifetime of the changes as often as necessary in order to ensure that the targeted goals are achieved.

The NEC was to draw upon the expertise of expert educators, educationists, researchers and professionals, who would form at least 50 percent of its composition, alongside ministers and officials from the various ministries involved in education, from both the centre and the states. Given the frequent changes in leadership within governments and ministries, there is a lack of institutional memory that affects long-term planning. It was anticipated that such a composition of the NEC would provide long-term continuity in decision-making.

Ensuring the success of policy implementation is a challenging task and there is evidence to show that only one in seven policies succeed around the world (*McGuinness and Slaughter, 2019*). India's own experience of implementing previous education policies is testimony to the fact that several decades later, many aspects of previous policies remain either unimplemented or poorly implemented. This is because the spirit of the policy is rarely transmitted to implementers, and implementation plans rarely create feedback loops (*McGuinness and Slaughter, 2019*). It is therefore critical that the implementation plan of NEP-2020 includes provisions for continuous feedback gathering and the leveraging of data to evaluate what has worked and what hasn't, as part of assessment and monitoring of overall progress. The NEC was intended to take a long-term view, based on regular analysis of data gathered.

One additional role that NEC was intended to play was to coordinate between different ministries of the government engaged in education and skill development, such as the Ministry of Women and Child Development that is involved in Early Childhood Care and Education (ECCE) and in helping to ensure the attainment of foundational literacy and numeracy; and the Ministry of Skill Development and Entrepreneurship (MSDE) that has an overlapping mandate with Ministry of Education with regard to provision of vocational education. The difficulties of working across ministerial boundaries are well known and the composition of the NEC was intended to help overcome these difficulties and preserve the interests of students. The suggestion that the Prime Minister could head the NEC was also made primarily for this purpose, and for increased funding support during the long implementation phase.

Historically, CAGE has been a mechanism for coordination between states and the centre with the primary participation coming from education ministers of all states and UTs. It will now need to be remodelled and rejuvenated to take on all the roles outlined above if success in implementation is to be assured.

## CONCLUSION

HEIs in India have remained at the periphery of society for far too long. The NEP–2020 envisages that HEIs and their faculty members would take centre stage through building bridges with industry and their local communities, in order to give students the opportunities to learn in real life situations and become aware of the challenges and needs of society, the economy and the country. For instance, attaining SDG 4 “Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” with its seven targets, four of which are related to skill development and decent jobs, will require that the goals of NEP–2020 are attained in full. Similarly, embracing the remaining SDGs and contributing to attaining their goals and targets can become a crucible for innovation and an important opportunity for HEIs to train youth for millions of ‘Green jobs’ that are becoming available and to help them contribute to the economic growth; to contribute to increasing female participation in the workforce; to work towards a society with reduced inequalities; and to conduct research towards sustainable cities and communities, towards climate action, among others.

NEP–2020 places the interests of students at the centre of all decision making and seeks to provide them with relevant and quality educational experiences that enable them to deal with a rapidly changing world. It envisages ushering in a new era of cultural transformation in the context of the realisation of a multi-dimensional and vibrant knowledge society. Every stakeholder in the education system must recognise this need for cultural transformation, identify his or her own role in it as appropriate, embrace it and practice it consistently with complete commitment. It is only when motivated faculty members, enlightened

managements of HEIs, regulatory and standard-setting bodies, and officials within government departments imbibe the spirit of the policy in this manner, that its lofty goals can be achieved.

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## End Notes

<sup>1</sup>[https://www.ugc.ac.in/pdf/news/3986236\\_NSQF-999-newly-approvedinstitutions.pdf](https://www.ugc.ac.in/pdf/news/3986236_NSQF-999-newly-approvedinstitutions.pdf)

<sup>2</sup><https://www.selectusa.gov/medical-technology-industry-unitedstates#:~:text=Thepercent20Unitedpercent20Statespercent20remainspercent20the,toppercent20growpercent20topercent20percent24208percent20billion>

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# REALISTIC IMPLEMENTATION OF THE NATIONAL EDUCATION POLICY–2020 SOME POINTERS

Shakila T. Shamsu

*National Education Policy–2020 (NEP–2020) looks at school and higher education as a single organic continuum, and is rooted in the Indian ethos and constitutional values with equal emphasis on the imbibing 21st century skills. The task of implementing national policies, while at the same time respecting and incorporating regional aspirations and an inclusive agenda of growth, is indeed challenging. Education is a subject in the Concurrent List and it is logically imperative that a participatory approach in which all stakeholders, be it Central Government, State/UT Governments, regulatory bodies, academics, autonomous bodies and institutions, private sector and all other players, work together towards a common goal. While outlining the implementation framework, linkages between education and other related services like health, sports, industry, S&T, IT, etc. must be suitably factored so as to ensure commonality in achieving the outcomes.*

## PRELUDE

Public policymaking in the 21st century and the varied challenges that developing countries like India face in crafting policies suited to the changing socio-economic needs in a highly globalised environment is an engaging area for research. This article seeks to present a roadmap for the holistic implementation of the National Education Policy (NEP) 2020. NEP–2020 is the outcome of extensive and comprehensive consultations, aimed to make India a knowledge superpower, by equipping its students with the appropriate knowledge, capabilities and skills. It covers the entire educational spectrum from

early education to higher education, vocational studies, teacher education as well as adult education. Here, we are confining to the implementation of higher education reforms in NEP–2020.

## SOME POINTERS FOR IMPLEMENTATION OF THE POLICY

### Overview of NEP–2020

The NEP–2020 is aligned to the 2030 Sustainable Development Goals and its underpinnings resonate the multidimensionality of 21st century *learning-to know, to do, to live together and with others, and to be*. NEP–2020 looks at school and higher education as a single organic continuum, and is rooted in the Indian ethos and constitutional values with equal emphasis on the imbibing 21st century skills. It *inter alia* includes universalisation of pre-primary education, Foundational Literacy and Numeracy Mission, flexibility in the choices of courses for students; examination, governance and regulation reforms; accreditation for quality in public and private institutions; focus on inclusion of all sections; innovative use of technology; embedding vocationalisation at all levels and multiple pathways of learning; promoting Open and Distance Learning; policy for gifted children; revamping of teachers' education; National Research Foundation; learner-centric focus for the holistic development of students; developing India as a global study destination to promote internationalisation of higher education; and rename Ministry of Human Resource Development (MHRD) as the Ministry of Education (MoE), among others.

The Policy articulates 22 cardinal principles that will guide the entire education system which specifies, among others, the notions of flexibility, holistic development, conceptual understanding, creativity and cognitive thinking with the focus on learner centeredness; promoting multilingualism, equity and inclusion, ethics, human and constitutional values; respect for diversity and local contextualisation; developing synergy across curriculum at all levels and life skills learning; recognising the centrality of teachers; academic and

examination reforms and expanded use of technology; amending existing regulatory systems; rootedness in Indian culture, knowledge systems; strengthening the public education while recognising the private sector; and that education is public service with a need for greater financial investment.

### **Higher Education: Salient Recommendations**

Before making any attempt to outline an implementation plan, the salient features of higher education recommendations are essential.

1. Gross Enrolment Ratio (GER) is targeted to increase to 50 percent by 2035.
2. The HEIs will be mapped to a new vision and architecture for higher education with large, well-resourced, vibrant multidisciplinary institutions, ranging from Research-intensive Universities, Teaching-intensive Universities and Autonomous degree-granting Colleges.
3. A holistic multidisciplinary integrated education at the undergraduate level with creative combinations of study of Science, Arts, Humanities, Mathematics and professional fields, integration of vocational education and having imaginative and flexible curricular structures and multiple entry/exit points is envisaged.
4. Initiatives will be taken to ensure optimal learning environments that are engaging and supportive, enabling all students to succeed. All institutions and faculty will have the autonomy to innovate on matters of curriculum, pedagogy, and assessment within a broad Higher Education Qualifications Framework that ensures consistency across institutions and programmes and across the Open and Distance Learning (ODL), online, and the traditional ‘in-class’ modes. High-quality support centres to be set up to encourage and support students from socio-economically disadvantaged backgrounds.
5. To ensure Equity and Inclusion, that no child loses any



opportunity to learn and excel because of the circumstances of birth or background, special emphasis will be given on Socially and Economically Disadvantaged Groups (SEDGs) to ensure equity and Inclusion.

6. Open and Distance Learning will be expanded, thereby contributing to enhancing the Gross Enrolment Ratio. Online courses and digital repositories, funding for research, improved student services, credit-based recognition of Massive Open Online Courses (MOOCs), etc., will be taken to ensure high quality of ODL.
7. Internationalisation of education will be facilitated through both institutional collaborations, and student and faculty mobility and allowing entry of top world ranked Universities to open campuses in our country.
8. Faculty will be energised and motivated through a variety of reforms. These include clearly defined, independent, and transparent recruitment processes and incentivising excellence through appropriate rewards, promotions, and progression into institutional leadership. Faculty will have the freedom to design their own curricular and pedagogical approaches.
9. Measures will be taken to ensure leadership of the highest quality and promote an institutional culture of excellence as having robust institutional governance through an empowered Board of Governors.
10. The separation of functions of regulation, accreditation, funding, and academic standard setting will see a transformation of the current regulatory architecture. There will be a single overarching umbrella body for promotion of higher education—the Higher Education Commission of India (HECI), with four new verticals for the above functions. Regulation will be ‘light but tight’. Public and private HEIs will be governed by the same set of norms for regulation, accreditation and academic standards.
11. A new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated and by

2030, the minimum qualification for teaching will be a 4-year integrated BEd degree. Stringent action will be taken against substandard standalone Teacher Education Institutions (TEIs)

12. A National Mission for Mentoring shall be established, with a large pool of outstanding senior/retired faculty – including those with the ability to teach in Indian languages and who would be willing to provide mentoring/professional support to university/college teachers.
13. National Research Foundation (NRF) will be the new entity to enable a culture of research in our universities, suitably incentivise outstanding research, and to seed and grow research at state universities and other public institutions.
14. All professional education will be an integral part of the higher education system. Stand-alone technical universities, health science universities, legal and agricultural universities, or institutions in these or other fields, will aim to become multidisciplinary institutions.
15. The National Educational Technology Forum (NETF), will be created as an apex advisory body on making right choices on the use of technology to enhance learning, assessment, planning, and administration. Appropriate integration of technology into all levels of education will be done to improve classroom processes, support teacher professional development, enhance educational access for disadvantaged groups, and streamline educational planning, administration and management.
16. A comprehensive set of recommendations are outlined for promoting online education to ensure preparedness with alternative modes of quality education. Towards this end, a dedicated unit for developing digital infrastructure, digital content and capacity building will be created.
17. Initiatives for promotion of Indian languages to ensure the growth of all Indian languages with more programmes being offered bilingually, and setting up language academies like Institute for Translation and Interpretation to strengthen language departments, will be undertaken.

## FINANCING AND MAKING IT HAPPEN

NEP–2020 reaffirms that education is a public service and must not be a commercial activity or a source of profit. Multiple mechanisms with checks and balances will combat and stop the commercialisation of higher education. All education institutions will be held to similar standards of audit and disclosure as a ‘not for profit’ entity. The centre and the states will work together to increase the public investment in Education sector to reach 6 percent of GDP at the earliest. The Central Advisory Board of Education will be strengthened to ensure coordination to bring overall focus on quality education.

## FUNDAMENTAL PREMISES FOR EFFECTIVE IMPLEMENTATION

The task of implementing national policies, while at the same time respecting and incorporating regional aspirations and an inclusive agenda of growth, is indeed very challenging. Education is a subject in the Concurrent List and it is logically imperative that a participatory approach in which all stakeholders, be it Central Government, State/UT Governments, regulatory bodies, academics, autonomous bodies and institutions, private sector and all other players, work together towards a common goal. Higher Education Institutions (HEIs) are autonomous entities that enjoy academic and administrative freedom. The actionable points must move in parallel rather than in an incremental stage-by-stage manner. The convergence among actions to be taken at the National level with those at the State and the institutional levels is critical to effective implementation. While outlining the implementation framework, linkages between education and other related services like health, sports, industry, S&T, IT, etc. must be suitably factored in, so as to ensure commonality in achieving the outcomes. There is a perceived need for greater coordination amongst the relevant multiple agencies and functionaries, and also between education and other departments. Equally important is to take into account the ongoing schemes and initiatives currently being implemented. Many of these schemes can be modified or altered to

align to the proposed implementation strategies. This would ensure optimising available human, administrative, infrastructural, and financial resources. It is pertinent to note that the Draft NEP 2019 has provided some detailing on the implementation which is worth examining too (DNEP–2019).

## TOWARDS REALISTIC IMPLEMENTATION

Policies, in general, are aspirational vision documents which postulates the trajectory of changes to bring about transformation. The successful and complete implementation of any policy will determine its efficacy in achieving the desired goals. The challenge inevitably lies in working out a robust implementation strategy. This requires:

- clearly identifying the responsibility of agencies/bodies;
- identifying the major, medium and micro/unit level actions and strategies;
- the detailed timelines and phasing;
- having multiple models for different states and institutions depending on their preparedness and availability of infrastructural, human and financial resources;
- financial resources; and
- a proper mechanism for regular review and monitoring.

### Agencies Anchoring the Responsibility

The reforms require actions in parallel at the Central, State/UT and institutional levels. At the national level, the main players are the Ministry of Education; the existing regulatory bodies University Grants Commission (UGC), All India Council of Technical Education (AICTE), National Council for Teacher Education (NCTE) etc.; national or apex level institutions, like Association of Indian Universities (AIU), National Institute of Educational Planning and Administration (NIEPA), National Assessment and Accreditation Council (NAAC), National Board of Accreditation (NBA), Indira Gandhi National Open

University (IGNOU), Inter University Centres for Teacher Education (IUCTEs) etc.; and the new structures which will be created, like Higher Education Commission of India (HECI) etc.

The State/UT Governments need to actively involve their Higher Education Councils; all their higher education and research institutions, industry bodies, civil society, think-tank bodies; organisations in the development sector; autonomous bodies in economic planning and public policy, accreditation, capacity building, open & distance education institutions; and language institutions in this exercise. Given the thrust on internationalisation, the involvement of bilateral bodies, and international offices within the HEIs also need to be invited. At the institutional level, within each HEI, a Nodal Unit must be identified to making the Institutional Development Programme (IDP) and the Programme of Action preferably involving the Internal Quality Assurance Committee (IQAC), and other relevant departments.

Ideally, an overarching Implementation Task Force can be constituted at the Central and also the State/UT levels, which will include relevant government departments, such as Technical Education, Skill Development, Social Justice, Tribal Affairs, Women & Child and others, along with stakeholder representatives of the above-mentioned bodies and institutions.

Since NEP–2020 highlights the inter-connectedness between different stages of education, the implementation of higher education reforms will need to factor in the realities and current status of secondary stage education. For instance, the transition rate of secondary stage education is a determinant of GER at higher education. Existing disconnect between secondary schooling and higher education is a major deficiency in the current system. This must be addressed while arriving at baseline data for realistic trajectory of future action.

### **Broad Actionable Points**

The 17 major recommendations excluding the GER target can be broadly clubbed under the following actionable themes. These are

macro-level points which will have to be broken down or unbundled to specific micro-level actions/activities:

***New Legislations, Amend Existing Regulations, Develop New Frameworks, New Bodies (Action to be done at Central/National level)***

- Reconstitute Central Advisory Board of Education (CABE) and revise its mandate as per NEP.
- Enact Higher Education Commission of India Act and process to annul UGC, AICTE, NCTE.
- Establishing new four independent verticals within the umbrella architecture:
  - *Regulation*: Creating National Higher Education Regulatory Council,
  - *Accreditation*: Creating the super accreditor and suitably altering existing NAAC, NBA,
  - *Funding*: Establishing Higher Education Grants Commission out of erstwhile UGC,
  - *Academic Standard Setting*: Creating General Education Council (GEC) which will perform academic standard setting functions of such disciplines not covered by other PSSBs and existing Professional Councils of the different domains will be redesignated and remodelled as Professional Standard Setting Bodies (PSSBs).
- Strengthening Internal Governance of HEI's by developing guidelines for Empowered Board of Governors (BoGs).
  - Action to set up BoGs will be appropriately taken by State/UT governments, State Universities and aided colleges and private HEIs.
- Establishing the National Research Foundation (already done).

- Bill permitting Foreign Universities to open campuses inland and vice-versa.
- Necessary regulation to help standalone institutions in teacher education, legal education, technical education, medical education, and agriculture education to become multidisciplinary institutions. Though regulation of medical and legal education is excluded from NHERC, education in these two domains is part of the recommendation of integrating professional education.
- Amending existing regulations, statutes and ordinances relating to recruitment and career progression of faculty; appointment of Vice Chancellors/Directors; graded autonomy; credit mobility of regular, ODL, online and blended modes of learning; notifying discontinuation of MPhil; revise PhD regulations; and optimise Faculty Student Ratio and necessary incorporation of these in the individual Statutes.
- Setting up the National Educational Technology Forum (NETF) as an apex advisory body.
- Formulating the National Higher Education Qualifications Framework (NHEQF) and guidelines for the Academic Bank of Credit (ABC).
- New Curriculum Framework for Teacher Education (NCFTE) by the NCTE as a PSSB
- Develop National Professional Standards for Teachers (NPST) at all levels and National Committee for Integration of Vocational Education (NCIVE) along with the active involvement of Department of School Education, MoE
- Establish Indian Institute of Translation and Interpretation (IITI).

### ***Rationalisation of Higher Education Institutions***

- Developing a Matrix with pre-determined parameters for classifying HEI's as RU's TU's and Autonomous Degree Granting Colleges/constituent colleges.

- Categorising all higher education institutions—be it Central, State, Centrally Funded Technical Institutions, Deemed Universities, Unitary or Affiliated, Private Universities based on focus of teaching and research.
- Conversion of HEIs into Multidisciplinary Universities and identifying government and government-aided HEIs in each district/near every district and supporting it.
- Establish new or identify existing HEIs in each district/near every district and support it to become MERUs (Multidisciplinary Education and Research Universities).
- Ensuring balance of RU's, TUs within the state.
- Ensuring equity in access for unserved, underserved areas and special zones.
- Identifying autonomous colleges with potential to become universities.
- Identifying autonomous colleges which can be accorded degree granting status.
- Graded empowerment of affiliated and autonomous colleges to be initiated.
- Colleges to be encouraged, mentored, supported & incentivised to gradually become autonomous.

***Integrated Education and Flexible Holistic Multidisciplinary UG/PG & Research Programmes***

- The UGC or the HECI will develop the National Higher Education Quality Framework (NHEQF) and the Academic Bank of Credit (ABC)
- Following this, a decision to implement integrated education as well the flexible multidisciplinary programme across the country from a given academic year will have to be notified.



- Adding new departments in existing universities to convert single stream to multidisciplinary HEIs.
- Establishing/Strengthening Departments: Languages, Literature, Music, Philosophy, Indology, Art, Dance, Theatre, Education, Mathematics, Statistics, Pure and Applied Sciences, Sociology, Economics, Sports, Translation and Interpretation, etc. in all HEIs.
- All HEIs, public and private, to prepare an Institutional Development Plan which will cover:
  - o Assess faculty and other vacancies;
  - o Work out timebound recruitment plan;
  - o New departments to be opened;
  - o Academic arrangements/MOUs for forming HEI clusters to make multidisciplinary offerings possible;
  - o Assess faculty and infrastructural requirements for the new departments;
  - o Develop capacity building of existing faculty for multidisciplinary education;
  - o Ensure good basic facilities, academic and digital infrastructure;
  - o Create appropriate infrastructure and learning devices/resources for the differently-abled;
  - o Devise strategies for enhancing education of SEDGs; and
  - o Create necessary facilities to make colleges and institutions safe zones.
- State Governments will work out mapping HEI clusters and bring the private institutions to network within the cluster,

- Devise Institutional mentoring norms and identification of mentor -mentee institutions by the States,
- State Higher Education Councils (SHECs) to develop a broad curriculum framework for the four-year undergraduate programme.
- Introducing projects at UG level: community engagement, environmental, value based-internships, and industry apprenticeships.
- Norms for mandatory internships or apprenticeships in the UG programmes and HEIs to weave in these changes.

### ***Optimal Learning Environments***

HEIs will transform curriculum transaction and use innovative pedagogies to ensure:

- A stimulating and engaging learning experience for all students.
- Move towards continuous formative assessment to further the learning goals of each programme.
- Move to a criterion-based grading system that assesses competencies.
- Move away from high-stakes examinations towards more continuous and comprehensive evaluation.
- Identify accredited HEIs offering ODL courses and encourage them to develop online courses.
- Integration of online courses into curricula of HEIs.
- Setting up Student support Centers: professional academic and career counselling to be available to all students.
- Provide counselling for handling stress and emotional adjustments in all HEIs.
- Provide opportunities for participation in sports, culture/ arts/eco-activity clubs, community projects, etc.

- Support to students from rural backgrounds, including increasing hostel facilities.
- HEIs will ensure quality medical facilities for students in their institutions.
- Identify students needing financial support and ensure proper disbursements of scholarships.
- Create Gender Inclusion fund and other Social Inclusion funds.

### ***Equity and Inclusive Education***

- Set Gross Enrolment Ratio (GER) targets for SEDGs.
- Create more capacity within existing HEIs to meet increased targets of SEDGs.
- Special Economic Zone (SEZs) to be identified and established in aspirational districts or with larger concentration of SEDGs.
- Establish high quality HEIs in SEZs.
- Offer higher education in regional languages as per HEI's capabilities.
- Encourage bi-lingual teaching in colleges and universities.
- Ensure gender balance and create Gender Inclusion Fund.
- All SEDG scholarships to be brought on a single platform.
- Make admission processes more inclusive.
- Ensure sensitisation of faculty, counsellor, and students on gender-identity issue and its inclusion in curricula and other aspects of the HEI.
- Ensure all buildings and facilities are wheel-chair-accessible and disabled-friendly.
- Develop bridge courses for students from disadvantaged backgrounds.

- Strictly enforce no-discrimination and anti- harassment rules.

### *Energised, Motivated and Capable Faculty*

- Faculty will have the autonomy to innovate on curriculum, pedagogy, and assessment within a broad National Higher Education Qualification Framework (NHEQF).
- Filling up all the vacant /sanctioned posts across all the HEIs.
- Attract PhD students to teaching through teaching assistantships.
- Promote research on pedagogy & teaching-learning models in HE.
- Provide research grants to faculty for proposing/ implementing innovations– online training, e-content, courses, skills, assessment tools etc.
- Focus on student-centered pedagogy.
- Supervised project-based learning, student satisfaction surveys, cooperative learning, gamification, community project, develop analytical skills and technology mediated pedagogy.
- Establishing a National Academy for Teaching, Learning and Leadership.
- Strengthening existing Human Resource Development Centre (HRDCs), AICTE capacity building measures, Pandit Madan Mohan Malviya National Mission for Teacher Training (PMMMNTT) centres and other institutions, such as National Institute of Technical Teachers’ Training and Research (NITTTRs), IUCTEs.
- Continuous Professional Development

- o Establish Centres of Excellence CoEs/Teaching Learning Centers,
  - o Identify Tutor’s for faculty mentoring,
  - o Identify Pedagogic Experts,
  - o Conduct Faculty Induction Programmes (FIPs),
  - o Conduct Leadership Development programmes, and
  - o Conduct Online Refresher Courses,
- Faculty to be given active role for preparing the Institute IDPs.

### ***Teacher Education***

- States to collect data of all standalone TEIs so that steps will be taken to convert them to multidisciplinary institutions or join a HEI cluster.
- Teacher education programmes will include cutting edge pedagogy training and grounding in Sociology, History, Science, Psychology, ECCE, foundational literacy & numeracy, knowledge, culture, values of India.
- Establish Education Department in HEIs.
- Multiple forms of teacher education: HEIs offering the 4-year integrated BEd may also run a 2-year BEd, for students who have already received a Bachelor’s degree in a specialized subject. A 1-year BEd may also be offered for candidates who have received a 4-year undergraduate degree in a specialised subject.
- Offer scholarships to meritorious students for all types of BEd programmes.
- Identify ODL institutions to conduct Teacher Education programmes

### ***Catalysing Quality Academic Research – New National Research Foundation***

- Work towards improving global rankings of HEIs.
- Seed research in State Universities.
- Greater industry-academia interaction.
- Encourage research in Languages, Social Sciences, Indian Knowledge systems, Sports, Sports Medicine, etc.
- Multidisciplinary Research in Artificial Intelligence, Machine Learning, Health, Agriculture and Climate Change.
- Set up a greater number of startups, incubation centres technology development centres, centres in frontier areas of research, greater industry-academic linkages, and interdisciplinary research in HEIs.
- Increased number of internships.
- Increased use of technology in training.
- Initiatives to promote innovations through ongoing and new activities.

### ***Technology Integration, Open and Distance Learning and Online Education***

- ODL will be treated on par with face-to-face education.
- Teacher Education and Vocational Education can be conducted through ODL.
- ODL accreditation will be introduced.
- ODL and Distance Education Institutions will be assessed for quality assurance and necessary steps to attain better quality will be undertaken.
- Develop multiple models for blended learning.
- Creation of Digital infrastructure in HEIs.

- Developing institutional, student and faculty preparedness.
- Online teaching platform and tools.
- Content creation, digital repository, and dissemination.
- Offering courses in disruptive technologies, such as Artificial Intelligence (AI), Machine Learning (ML), Augmented Reality (AR), Virtual Reality (VR) etc. in HEIs and engage industry experts as faculty in these courses.
- Training and incentives for teachers.
- Online assessment and examinations.
- Technology integration in MIS and data management.
- Appropriate training for administrative staff.

### ***Reimagining Vocational Education (VE)***

- Vocational courses to be introduced in all undergraduate programmes, including the 4-year Multidisciplinary Bachelor's programmes.
- State/UT Governments and /or HEIs to set up Skill Labs.
- HEIs to conduct short-term courses in various skills including soft skills.
- '*Lok Vidya*', developed in India, to be integrated into Vocational Education (VE).
- Vocational courses to be offered through ODL mode.
- Efforts to bring dropouts to reintegrate them by aligning their practical experience with the relevant level of the NHEQE.

### ***Promotion of Indian Languages, Arts and Culture***

- Establish Academies for different languages.

- Establish departments in HEIs for Indology, arts, translation & interpretation, museum administration, Indian languages etc.
- High-quality fonts, software, books, learning materials, etc. will be developed for all Schedule 8 and other Indian languages.
- Document all languages, arts, and culture in India via a web-based platform.

### *Internationalisation of Higher Education*

- Steps must be taken by States/Union Territories (UT) to develop India as a global study destination.
- Work out programmes and schemes for promoting faculty and student mobility.
- Facilitate foreign students by setting up Foreign Student Officers (FSOs).
- International campuses of Indian universities to be opened abroad – Government of India (GOI) and State Governments to work out a list of potential institutions.
- Top 100 Universities to open campuses in India – action after Bill is enacted.
- Eminent faculty from foreign universities to be invited to Indian universities and colleges, faculty exchanges and research collaborations.
- GOI & State Governments to identify HEIs to add more foreign students.
- New courses to attract international students to India – Indian Culture, Yoga, Arts, Languages along with regular Degree and Professional programmes.



## Timelines and Phasing

The NEP–2020 specifies timelines in a few recommendations: viz GER target of 50 percent by 2035, totally phasing out affiliation by 2035, and all standalone TEIs and other institutions to become multidisciplinary by 2030. An attempt to broadly divide the identified actions within four phases is given below. Further, what is articulated here is not rigid or inflexible but is only a projection of the desired direction. A certain degree of flexibility will be expected, given the local conditions and regional needs to suit contexts and emerging scenarios, failing which implementation will be rendered either difficult or unfeasible.

- *Immediate (up to March 2022)*: The actionable points listed under New Legislations, amend existing regulations, develop new frameworks, new institutional structures/bodies which have to mainly be done at Central/National levels must be completed preferably by December, 2021 or early 2022. Only if the legislations and regulations are in place, can action be initiated in full earnest on the other actionable points.
- *Short-term (academic year 2022-23 to 2024-25)*: Most of the actionable points listed under Sl. Nos. 2 to 12, which are largely process-driven, can be initiated as soon necessary legislative enactments have been made or guidelines issued. Notwithstanding this, preparing Institutional Development Plans which outlines the comprehensive strategic vision of each HEI – filling faculty positions; opening new departments; introducing curricular, pedagogic, assessment reforms including technology-enabled learning; promoting ODL; and integrating vocational education – can be initiated by the States/UTs and also the colleges, universities and other academic institutions, so that the goals of holistic, integrated multidisciplinary education can gradually be realised. However, we must be cognisant of the fact that a substantial number of institutions are there in the states and each of these states are at different levels of educational indices with respect to access, equity,

and quality. Similarly, the HEIs are of varied sizes – some with optimal enrolment and some sub-optimal – and are at different stages of their development indicators: academics, infrastructure, learning resources, faculty availability and training, and digital empowerment. This would unfortunately, mean that a few institutions may not translate all the envisaged actionable points within the indicative timelines. However, depending on the effective date of the 3/4-year flexible UG programmes to be rolled out throughout the country, it is imperative that all states and their institutions mandatorily adhere a final cut-off deadline. Failure to do so would result in a chaotic higher education academic structure, which would greatly harm the students. Hence, every state must work in tandem and in a coordinated manner with their HEIs to reach the targeted date.

- *Medium-term (between academic year 2025-26 till 2030):* Many of the operational and infrastructure intensive as also research focused actions may take shape in the emergent HE scenario during this phase. These include complete implementation of reforms in teacher education, strong research base in state institutions, making new Foreign Universities functional, granting Autonomus College (AC) status to colleges, and operationalisation of SEZs across the country.
- *Long-term (between academic year 2030 and 2035):* Major structural changes, such as closure of standalone institutions, setting up and operationalising Multidisciplinary Education and Research University (MERUs), monitoring SEDG GER targets, ODL and VE enrolment so as to ensure attainment of 50 percent GER.

## Multiple Models

Given the variations in the state's educational development and also among the HEI's themselves, it may not be desirable to be

prescriptive with a single uniform Programme of Action (PoA) for the entire country. To avoid such a situation, it is desirable and appropriate for each State/UT to formulate a PoA, which is synchronous to its regional, social and cultural needs. The PoA will outline the institutional arrangements, lay down administrative processes with clear performance indicators to achieve quantifiable targets and desired qualitative outcomes for these suggested phases. Equally critical in the context of democratic decentralisation and greater community participation that this process of specifying operational strategies will percolate downwards to the grassroots levels with each district, block formulating a PoA of its own. Similarly, each educational institution will prepare a micro-level operational PoA.

### **Financial Resources**

Financial resources have always been a challenge that limits efficiency in outputs. Hence, it is necessary that the government, private sector and all other extra-governmental agencies and relevant stakeholders, provide the resource support for implementing the NEP.

### **Review and Monitoring**

Learning from the past experiences, it will be the endeavour of each operating unit to devise appropriate monitoring methods, mechanisms, and systems, so that periodic assessment and evaluation of the progress made in achieving the outcomes and outputs of each actionable point can be undertaken.

The remodelled and restructured CABE will have a larger mandate to perform the role of constant monitoring of the implementation. Several Sub-Committees of CABE can be tasked to take stock of progress under different thematic areas. All States/UTs and HEIs must create Project Monitoring Units (PMUs). Regular review meetings at six-month intervals involving all stakeholders must be driven by the MoE. A dashboard for online monitoring with a user-friendly interface for the responsibility agencies with links to each HEI and state government regulatory bodies must be developed. This would

enable transparency and good governance and minimise risks of lack of institutional memory and also enable sustained review towards effective implementation.

## CONCLUSION

Education is the main driver and the catalyst for promoting the global goals of eliminating hunger and poverty, improving health, promoting gender equality; inclusive and sustainable economic growth; productive employment and decent work; peaceful and inclusive societies, building effective and inclusive institutions; and creating sustainable societies. The successful implementation of NEP–2020 will transform the educational system to one of high quality, affordable, flexible, and relevant to the individuals, economy and to the society as a whole, so as to develop India as a knowledge society.

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# ROADMAP FOR HOLISTIC IMPLEMENTATION OF THE NATIONAL EDUCATION POLICY–2020

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*After thirty-four years, the National Education Policy–2020 has come with a bounty of initiatives and innovations. NEP–2020 is a very comprehensive document covering the continuum of Early Childhood Care and Education, School Education and Higher Education. For Higher Education, the policy recommended several measures to improve the quality of education in universities and colleges, institutional restructuring and consolidation, move towards holistic and multidisciplinary education, creating optimum learning environment and support for students, equity and inclusion, teacher education, quality academic research and transforming regulatory system. The establishment of National Research Foundation is one of the much-needed initiatives to make Indian higher education world-class. Similarly, there are many recommendations which need befitting implementation.*

## PRELUDE

Higher Educational Institutions in India are striving hard to initiate many corrective measures in order to make themselves comparable with the global standards. They have been implementing the recommendations made by the Government, Regulatory Bodies and the National Policies on Education which were released way back and are outdated in their approach. However, after thirty-four years, the National Education Policy–2020 (NEP–2020) has come with a bounty of initiatives and innovations. The NEP–2020 is a very comprehensive document, covering the continuum of Early Childhood Care and Education, School Education and Higher Education. For Higher

Education, the policy gave several recommendations on improving the quality of education in universities and colleges, institutional restructuring and consolidation, move towards holistic and multidisciplinary education, creating optimum learning environment and support for students, equity and inclusion, teacher education, quality academic research, transforming regulatory system, etc.

The document, under the other key aspects, emphasised on professional education, adult education and lifelong learning, promotion of Indian languages, arts and culture, technology integration, and online and digital education. In order to materialise the recommendations, the policy document also suggests the need for strengthening the Central Advisory Board of Education (CABE), financial resources and the method of implementation. Among these, certain recommendations had their presence in the earlier policy documents also, but were never implemented properly, but most of them are novel and unique which are framed keeping in view the present and situation. In this article, a serious attempt has been made to suggest a few strategies for successful implementation of the policy.

## **STRATEGIES FOR EFFECTIVE IMPLEMENTATION OF THE RECOMMENDATIONS OF THE NEP–2020**

### **Strategies to Make Education Holistic**

Holistic education is the widely accepted concept in higher education. Universities can come out with different models to make higher education holistic in order to ensure overall development of the students to make them happier, cohesive and balanced individuals who can contribute to the progress and prosperity of the nation. This is possible if the universities develop their curriculum following the recommendations of NEP–2020. As per NEP–2020, “holistic and multidisciplinary education would aim to develop all capacities of human beings — intellectual, aesthetic, social, physical, emotional, and moral in an integrated manner. Such an education will help develop well-rounded individuals that possess critical 21st century capacities in fields across the arts, humanities, languages, sciences,

social sciences, and professional, technical, and vocational fields; an ethic of social engagement; soft skills, such as communication, discussion and debate; and rigorous specialisation in a chosen field or fields. Such a holistic education shall be, in the long term, the approach of all undergraduate programmes, including those in professional, technical, and vocational disciplines.” Many universities might have already developed some models of holistic education. It will be in the interest of the nation as well as other higher education Institutions if the HEIs which have developed the holistic model of education on the basis of the recommendations and guidelines of NEP–2020, display it on their institutional website. This will help all the other HEIs to prepare their models in a fast pace.

### **Strategies for Evolving Multidisciplinary Higher Education Institutions**

As highlighted in the NEP–2020 document, there should be a paradigm shift from single discipline or stand-alone institutions to multidisciplinary institutions. NEP–2020 recommends, “Large multidisciplinary universities and colleges will facilitate the move towards high-quality holistic and multidisciplinary education. Flexibility in curriculum and novel and engaging course options will be on offer to students, in addition to rigorous specialisation in a subject or subjects. This will be encouraged by increased faculty and institutional autonomy in setting curricula. Pedagogy will have an increased emphasis on communication, discussion, debate, research, and opportunities for cross-disciplinary and interdisciplinary thinking,” (NEP–2020). Multidisciplinary education will enable students of higher education to have a broader and more comprehensive perspective of different dimensions of the knowledge of the course they are pursuing. This includes professional, technical, and vocational dimensions as well. To make this concept work, UGC and other academic bodies should constitute expert committees and come out with specialized curriculum and action plan that can be tried out in general education and subsequently be implemented in professional higher education Institutions.



## **Developing Effective Curriculum and Pedagogy**

The quality of higher education mainly depends on the curriculum designing/ planning and teaching learning process. Higher education institutions should be given more autonomy for developing the functional curriculum and should be properly monitored by accrediting agencies. There should be a separate department/cell for curriculum designing at the university level, in the light of the expected 4-year degree courses under the nomenclature, Central Curriculum and Pedagogy Directorate (CCPD). This directorate can prepare initial/ experimental curriculum involving curriculum experts from outside India as well, for both UG and PG courses, based on multidisciplinary approach. The CCPD can work with General Education Council and also with National Higher Education Qualification Framework (NHEQF) to frame curricular policies.

## **Establishing National Research Foundation: A Much-Needed Initiative**

Research is an integral component of any higher educational institution. HEIs in all developed nations have given primary importance to research, which in turn helped them to find solutions and contribute for the welfare of the society. On the other hand, in most of the higher education institutions in India, research is offered for degree's sake. In majority of researches conducted at university level, the findings and results do not have functional applications. Since there is no insistence on application, students also take Research casually. Are our researchers not capable of doing functional and need-based research? The answer lies in many factors such as lack of financial support, supervision and monitoring, and atmosphere not leading to the development of research culture in the universities.

As research was not a priority area, required finance and other support was not rendered to HEIs for strengthening the research component in the universities. There are however, exceptions like Indian Institute of Science (IISc), All India Institute of Medical Sciences (AIIMS), etc. Recently, the institutions like Indian Institutes of Science Education and Research (IISERs) and National Institute of

Science Education and Research (NISER) have come up. In Indian universities, research dimension did not get the required importance so the country is lagging behind in many ways in comparison to other countries.

At this juncture, NEP–2020 recommendation for the establishment of National Research Foundation (NRF) has come as a great redeemer not only for the HEIs, but for the whole nation. NRF should be an apex body under the direct control of the central government. It should have experts from all over India as well from reputed foreign universities, representing various disciplines. Subject specific steering committees should be formed. Short as well as long range objectives should be framed along with strict implementation of rules. Funds should be reserved on par with International Research Forums. There should be a database of available funds. A Standard Assessment Tool can be developed for justified allocation of funds in a systematic way. To make it convenient to all the states, State Research Foundations with same rules and regulations be established as research is one area where there should be no discrimination between State and National universities or public and private universities. There should be a separate Central Research Auditing Body (CRAB) to monitor the activities as well as the finances of the Research Foundation.

### **Strategies for Ensuring Equity and Access to All**

Among the larger section of the student population who have no access to higher education includes women, economically weaker section, tribal students, rural students and students who are distinctly diversified. No doubt, our central and state governments have made great provisions; specially for Socially and Economically Deprived Group (SEDGS) students who are aspiring for higher education and international education, there is a need to introduce more scholarship. There is also an urgent need to review and restructure the schemes both at the central as well as the state level.

## Mainstreaming Vocational Education

One more area where our country did not make any strides is Vocational Education. The Economy of our country is suffering to a great extent due to this misstep. Whereas, Vocational Education should be imparted from the school level itself, our country never brought Vocational Education to mainstream education. As evident from the 12th five-year plan (2012-2017), there are less than 5 percent of students who receive formal vocational education in the age group of 19-24 years whereas in the USA it is 52 percent, Germany it is 75 percent and South Korea it is 96 percent. Vocational education in India needs a revolutionary change in many dimensions ranging avenues of imparting vocational education to the mindset of people. The courses need to be attractive as well as suitable keeping the abilities, needs, interests, and requirements of the students. In this regard, it is very much necessary to introduce special programmes and curricula that help the students to specialise in some courses according to their areas of interest.

To this effect, it is necessary to bolster vocational education from its early stages via a differentiation of curricula or the creation of alternatives.

Related to the previous point, there is another series of recommendations that focus on the need to review the programmes at the entry level in order to include students that could potentially benefit from this kind of education. In this way, it is not necessary for students to have graduated from primary or secondary school in order to take advantage of vocational schooling, and benefit from its positive effects. In this respect, it is recommended to:

- establish Rural Vocational Education Centers (RVEC) in collaboration with Pradhan Mantri Kaushal Vikas Yojana (PMKVY) involving Industrial/Business Association;
- include the vocational training programmes, practical work experience according to the students' professional objectives which have real work value and work culture; and

- develop assessment tools to establish periodic assessment systems for the training programs as well as vocational programmes.

## **Establishing Efficient Governance and Regulatory System**

The roles and responsibilities of regulatory bodies are very crucial in order to monitor the quality of higher education institutions—starting from admissions to examinations. As evident from the functioning of the existing regulatory bodies, the monitoring mechanisms are not totally transparent. This has led to the malfunctioning of higher education Institutions. As mentioned in the policy document, “The regulatory systems are in need of a complete overhaul in order to re-energise the higher education sector and enable it to believe.” Moreover, Indian Higher Education System is unpopular for being over-regulated and under-governed. To resolve the grave governance issues, the policy document, has suggested four regulatory bodies to be set up as four independent verticals working within one umbrella institution called the Higher Education Commission of India (HECI), namely:

1. The National Higher Education Regulatory Council (NHERC);
2. National Accreditation Council (NAC);
3. Higher Education Grants Council (HEGC); and
4. General Education Council (GEC).

These four regulatory bodies will ensure the distinct functions of regulation, accreditation, funding, and academic standard setting. However, for efficient governance of higher education institutions, the structure and functioning of these bodies are to be well-defined, and based on a good legal framework so that implementation becomes easy. There should be proper networking of these regulatory bodies with the HEIs of the country. Experienced academicians and administrators who have sound knowledge of the ground realities to be appointed or nominated to these bodies.

### ***Role of National Assessment and Accreditation Council***

The present National Assessment and Accreditation Council (NAAC) can be renamed as National Accreditation Council. Based on twenty-five years of rich experience in the field of Assessment and Accreditation, it will gear up a transformed role under the guidelines for the Higher Education Council of India (HECI). Policy states that NAC can act like a Meta Accreditation body in charge of accreditation of institutions whose accreditation process will be based on:

- Basic norms
- Public self-disclosure
- Good governance
- Outcomes

In this regard, NAC can assume the parental role to work out the robust system of graded accreditation which will specify phased benchmarks for all higher education institutions to achieve set levels of quality: self-governance and autonomy. NAC can work with NHERC to regulate the quality of higher education.

### ***Ensuring Rigor in Appointment of Faculty Members***

The existing method of appointing faculty members has many ambiguities which need to be removed for creating a sound higher education system. There should be a separate Teachers Appointment Cell (TAC) – both at the central and state levels with very stringent recruitment criteria. The cell should consist of academicians of integrity, specialized in different subject areas. To appoint faculty for the teaching profession, eligibility tests like National Eligibility Test (NET) or State Level Eligibility Tests (SLET) should be made compulsory. The tests should be standardised with proper weightage to both content and pedagogy. Demonstration of classroom teaching and research abilities should also be made compulsory.

### ***Strategies for Promoting Indian Languages***

India is a multi-linguistic and multi-religious country. Thousands of years of Indian culture is seen both in materialistic and non materialistic forms, such as traditions, customs, literature, arts, and so on. One of our objectives of education is to transmit our Indian literature and culture for the benefit of the individuals and also the society. There are more than 220 languages in the country. UNESCO has declared that 197 Indian languages are under ‘endangerment’. Hence, there is a need to come out with an action plan. The suggested ones are:

- Establishment of All India Pradhikar for Translation (AIPT) of useful ancient work of great scholars from Indian Languages.
- Language policy for higher educational institutions, to encourage the nurturing of Indian languages.
- Developing language related Apps Using Artificial Intelligence (AI) for self translation to understand the literature of the other languages.

### **Realising the Component of Internationalisation**

Internationalisation has brought a lot of mobility for students to move within the country as well as outside the country. Indology, Indian languages, Ayurvedic system of Medicine, Yoga, Art, Music, History and Indian Culture attracts foreign students to India to pursue their studies. Some of the Indian universities and Institutes of National Importance with their good Infrastructure, quality of education and less cost are attracting many foreign students. They can be upgraded to Class I universities.

In order to have more sustainability in this process, some of the universities and Institutes of National Importance should be given higher status through legislative framework, more funds, greater autonomy, high standard infrastructure. Apart from these, high ranked foreign universities can have collaborations with our universities. This will facilitate the main motto of Internationalisation of Education, so that many foreign students comfortably take admissions in Indian universities.

## CONCLUSION

The NEP–2020 is an extremely comprehensive document and has created a lot of scope to re-structure and revamp Indian education system on par with some of the advanced countries. There is a big challenge for academicians and policy makers to convert ideas into actions which bring significant changes and adds to the knowledge economy of the country.

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# LESSONS FOR CREATION OF INDIA'S FUTURE

Ram Takwale

*The society as a whole is participating in social change by using digital tools and techniques, and by adopting related changes in their life and work. The new education framework and policy (National Education Policy–2020) emphasises critical thinking and creativity. With the advent of digital age technologies, new processes and models of working and learning are emerging. Major contribution is the digitisation and creation of virtualisation that finally offered cyberspace, a virtual space wherein while the mind can roam and learn globally, the human body is at rest locally. These processes are foundational to the education system. In order to retain the imagination and creativity of humans, it is essential to create a work culture with DIY (Do-It-Yourself) practices in education and must move to a higher level of learning through concepts and processes by using a process-result based approach. All the lessons lead to a model of New or Forever Innovative Education.*

## PRELUDE

The first National Education Policy–1968 together with the second National Policies i.e. National Policy on Education 1986 and Programmes of Action 1992 were considered and implemented mostly during the period of the first machine-based industrial revolution and the resulting industrial society. The third NEP–2020 is launched at the time when Digital Machine-based Industrial Revolution is fully moving ahead on its way in its implementation and digital society formation. The radical changes in social transformation will obviously get reflected in the NEP–2020 and pose many fundamental issues and problems. We consider here two major issues: one of right model of education for digital society; and second, the model of development for creating India's future.



## DEFINING THE NATIONAL EDUCATION POLICY–2020

“Foundation pillars of this policy are access, equity, quality, affordability, and accountability” (Sec. 0.12 of the policy). The principles on which this policy is based are (Sec. 0.13): flexibility, no rigid separation (between faculties and subjects, academic and vocational courses, etc.), multidisciplinary and holistic education. It emphasises on conceptual understanding, creativity, and critical thinking, on ethics, and human and constitutional values. Besides other factors, finally, it considers that education is a public service and not a commercial activity. It assures access to quality education as a fundamental right for every citizen.

The crucial statements define the educational framework for India.

The other areas of concern in NEP are ‘Adult Education’ and ‘Technology Use and Integration’. In the digital age and their related changes in social life, revolutionary changes in society are taking place. Society as a whole is participating in social change by using digital tools and techniques, and by adopting related changes in their life and work. The concept of literacy and numeracy is also changing radically. Literacy is to be linked with techno-social changes, and also to working and employment for one’s livelihood. This becomes a dominant feature of literacy and education.

### **Vision of the National Education Policy–2020 is:**

- To offer the global best education system rooted in Indian ethos.
- To transform India into a worldwide knowledge superpower.

To achieve this vision, we obviously need a system of *new* education that will link education with the development and empowerment processes, which will enable us to reconstruct Indian society. The NEP has rightly included technology use and its integration with education and its development processes. A National Educational Alliance for Technology (NEAT) is created as an Indian apex body that will support all the states and educational institutes in their use of digital age technologies to enter the future. The transition

from one age to another is created due to newer technologies, which impact the life and work of people radically. They are the so called 'disruptive' technologies and must be used to move from existing social 'normal' to a 'new age normal, for achieving social transformation.

## NEP-2020 AND FRAMEWORK OF THE INDIAN CONSTITUTION

The Preamble of the Indian Constitution and the Fundamental Duties of every citizen of India offers the larger framework for NEP-2020.

The Preamble prescribes the human values of Liberty, Equality, Fraternity, and Justice to all its citizens; and the social organisational principles to constitute India into a Sovereign Socialist Secular Democratic Republic to be secured to all its citizens. This is given by *We, the People of India*, to ourselves.

It also gives the Fundamental Duties of the Constitution, such as '*striving for excellence*' to help rise constantly to higher levels of endeavour and achievement; to develop the scientific temper, humanism and the spirit of inquiry.

### *Facilities and Limitations of the NEP-2020*

The approach employed in NEP-2020 is to offer the Foundational Principles and the Frameworks in some situations that should enable to achieve the results expected from the implementation of the principles. Educational structures of schooling from KG to 12<sup>th</sup> standards are 5 (3+2) +3 +3 +4, and College/University structures are 3+1 (Honours) +2 (Masters) + PhD. In the earlier policy, +2 of Higher Secondary after 10<sup>th</sup> standards (5+3+2+2) was expected to be vocational diversification. However, it did not succeed and was ultimately added to the university streams, thus defeating the purpose. The new pattern of NEP-2020, adds KG of 3 years to the schooling making it 12+3 =15 years; and the four years (9-12 standards) at the Senior High School level is for the skill education of choice of students by making education multidisciplinary and holistic. Regular

formative assessment for learning is expected to be used than the summative assessment at the term/year-end examinations, which, it is found, is promoting memorisation and coaching culture. Instead, the new education framework emphasizes critical thinking and creativity.

In brief, the Framework and Foundational Principles offer enough freedom and flexibility *to create new models of education* that enables design processes that can achieve the results expected from the principles.

The NEP–2020 has avoided the problem of The Education Commission of India (1964-66) to define the model of '*national development*'. It automatically accepted the Western Model of Education, which was not suitable for the Indian ethos. The Western Model of Education was *Linear* (conveyor belt approach), *Conformist* (requiring ISO standards), and *Class Creating* (Product Class-First, Second, Third & Reject) (*Robinson, 2010*). It is unsuitable to create the values and principles given in the Indian Constitution. The Western education model is based on an industrial model of education. It further promoted competition to earn high ranks for those who earn high grades and find bigger and higher paid jobs in the employment markets. It is good that no such model of education and development is prescribed in the NEP–2020. It should promote multiple models; an environment *to let a thousand flowers bloom*. In this context, the central system of examination may have difficulty in creating multiple models of assessment to evaluate any new model of education created by HEI: either by students like Eklavya or by teachers of modern HEI.

## **MAJOR ISSUES IN IMPLEMENTING VISION OF NEP–2020**

Every Higher Education Institution (HEI) – universities, major colleges and cluster of colleges under NEP–2020 is expected to become an autonomous institution within the next 15 years, i.e. by 2035. They will have to become mass universities with global jurisdiction. Their existence at some local place in India has to be

linked with local-global nature of knowledge and development. By using cyber space offered by digital technology, HEIs can be local in a physical area, where they can use the 'learning from global knowledge'. This gives a new principle of learning and creating the much needed *Learn globally and Act locally*.

The Education Commission (1964–66), who's report was titled *Education and National Development*, could not link education directly with development. The report contained proposals of two distinct models:

- a. First, the blueprint of which was given in detail was based on 'Education of Our People'. It was an extension of the thought of Gandhian Education, which is linked with social development and employment and emphasised on knowing and working in at least one basic vocational field. This model of education was a non-starter. The reasons of its failure were analysed by J P Naik (*Naik, 1982*).
- b. Another model was following the Western or British Model of Education having hierarchical approach in impacting social structures. The purpose was that education in India should support the path of Indian Industrialisation as was done in Briton and Western countries.

The Education Commission has studied education holistically from early childhood to university education, and adult education to open education and distance or own town education. It formed the basis for the next NEP–1986–92 and supported education development for nearly five decades.

## **IMPACT OF DIGITAL TECHNOLOGY—USE IN MODERN TIMES**

With the advent of digital age technologies, new processes and models of working and learning are emerging. Major contribution is the digitisation and creation of virtualisation that finally offered cyberspace, a virtual space wherein while the mind can roam and learn globally, the human body is at rest locally. This roaming and

interacting in the cyberspace can be digitally tracked, due to the digital technology used in creating global-local networking and supporting it by cloud technology.

First Industrial Revolution had started in the 19th century with the discovery of steam engine, which revolutionised the production, communication (through telegraphy) and transport processes. Automotive process of steam engine was used in steamers, railways, which needed railroads for its transportation, and in factories to develop conveyer belt processes for creating products in terms of goods and services. The First Industrial Revolution of mass production started in Europe, changed the production, marketing and wealth creation processes, and the power it generated created a new and modern world. It hardly lasted the 19th century when energy of steam used in a steam engine was replaced by gasoline and later by electricity. This change has made machines smaller, and during the 20th century, machines entered in the living and working processes of people and their societies. The First Industrial Revolution created a class of people with enormous wealth—the *Class Revolution*. The Second Industrial Revolution with change in energy resources used for machines enabled experts to create small and portable machines. This enabled mass of people to participate in use of machines in their working and living situations. The Second revolution is thus a *Mass Revolution*. This is a characterisation of Industrial revolution brought about by the *First Machine* (Automotive Engine), and *Second Machine* in which engine uses digital technology.

Digital age is often considered to have started when internet services was made public in 1995. Since then, the growth rate due to technology use in living and working functions has become so fast that from the earlier one century of change and social impact is now being experienced within 20 years! Changes are both in technologies and in ways of living and working. The Third Digital Industrial Revolution started by Second Machine lasted hardly for two decades (1995–2015) forming a class revolution. First Digital Revolution was succeeded by *mobile digital technologies* during the next two decades (2015–35) and is enabling mass of people to participate in the change. The next change, the Fifth Artificial Intelligence (AI)-

based Digital Industrial Revolution is expected between 2035 to 2055 and continue till later. However, it has already started showing its impact through advanced robots, IoT (Internet of Things), and Drones, creating an Industrial Revolution with automated and self-controlled movements of advanced engines with digital technology in which AI is being used extensively.

It is predicted that by 2025 nearly 69 percent of people in India will lose their jobs due to technological change. Experts in these fields are predicting that last human being will be out of the factory during the 2035–40–year period. Sec 23 of the NEP gives enough emphasis on using AI in various areas of machine learning and its applications. Now plenty of jobs are available with the latest technologies using AI and machine learning. New branches of big data and analytics are now emerging fast with a multiplicity of apps that were not visualised earlier.

Advanced technologies and AI are creating and changing fast the living and working processes. The education in such a scenario will have different nature and must address the issues of livelihood and creation of future society.

## **CHALLENGES IN IMPLEMENTING THE NEP–2020**

With these changes having a rate of nearly five times higher, it is difficult to visualising the long-term scenario that technology is creating. The approach to project the past into the future is redundant since an entirely new future is getting created. The first and second machines are created by employing a scientific approach using causality and rationality. They work in the real space. However, cyberspace is created by the virtualisation process of digital technology for mind and motivation operations in which thinking and learning processes are operating. These processes are foundational to the education system. All the movements of animate and inanimate bodies take place in the real space. The movement of inanimate bodies is fully known by science in which human beings are concerned. The human mind has an imaginative and a creative nature. A new Science of Human Action has to be used to deal with processes in which the

human body is involved especially in the digital society, (*Takwale, 2018*). With these issues, the main challenges are:

1. Linking education with social development and creation of values. This will enable us to use Mahatma Gandhi's approach of *Nai Talim* (New Education) to link education with livelihood by using one of the basic vocations that is very essential to the needs of human living, (*Panse, 2007*).
2. Digital Technology with AI use will create gadgets that will take away the jobs of people working with old technologies. New ways of replacing those jobs with new technology and creating new engines/apps that will take us to the fourth and fifth digital ages.
3. Creating an education model that uses the pedagogy of social reconstruction, by following JP Naik's model of education for the creation of future (*Naik, 1982*). Link education with life-long learning and make education life centric–human life of individuals or groups and communities (*Panse, 2007*).
4. AI-based digital technologies are creating a new scenario in which new gadgets, such as advanced robots, IOTs or smart things, and drones are going to serve humans in their life situations. When digital machines are working in production, machine communication and transportation, a new scenario of *plenty* and *non-working class* could be created in the new digital society. In order to retain the imagination and creativity of humans, it is essential to create a work culture with DIY (Do-It-Yourself) practices in education for ensuring the progress and modernity of the digital society and nation.

### LESSONS FOR THE FUTURE CREATION: A MODEL OF NEW EDUCATION

Already we are in the 4th digital industrial society with an ambiance of knowledge everywhere, accessible to anyone, anytime, anywhere. Open resource movement has been adopted by many and forced a lot of them to open their knowledge resources to all for various reasons. The knowledge revolution is going on. The COVID–19 pandemic has

forced people to work from home for their life security and has forced for economic reasons to adopt education and work from home by using online education and working. This is creating a new situation; and information-based education is unsuitable in such a scenario.

We must move to a higher level of learning through concepts and processes. We follow here the thinking of Mahatma Gandhi in his *Nai Talim* (Panse, 2007) and of JP Naik (Naik, 1982) in his *Lessons for Future Creation*. Going forward, we have to use a process-result-based approach to incorporate a scientific approach with causality and rationality applied to a system under consideration. All the lessons lead to a model of New or Forever Innovative Education. It is a model that can be applied to a total system under consideration:

1. Process-Result-based approach to learning and development.
2. Universal-Global-Local approach to the issues and problems and solutions being considered.
3. Using pedagogy of *Social Reconstruction* with three ways of learning:
  - a. *Role-based learning* is used for the persons in the system;
  - b. *Scenario-situation based learning* is used for creating new scenarios to move forward towards a new digital society; and
  - c. *Problem-solving based learning* is identified from issues and problems faced in the situations.
4. *To find the path of life by linking education with life processes* and playing roles of actors with their unique actions useful in finding the path.

The four lessons forming process Models of New Education essentially contain:

- The *first lesson* for the new age society is to adopt process-result based approach in the form:

***Input → Process → Results***

Each process consists of a series of steps of action, which is a part of the process with content. The above process is entirely based on the



scientific approach of causality and rationality; and inputs in terms of motivation and skills are to be used to get the required results. Obviously, it works in real space. Instead of considering the items of information, we consider it in the form of a process. Knowledge is therefore transferable, and learning becomes faster and more actionable. Instead of information learning, we do process learning. A chain of processes can form a function of human being or the system under consideration. A chain of functions can form a model or role of a human being.

- The *second lesson* is of using the processes applicable to the local situations or global situations. In the process of thinking and learning, the body remains local and learning can be done by the brain processes while the mind is roaming in the digital space globally or universally.
- The *third lesson* is to have a Pedagogy of Social Reconstruction. Here, we are following JP Naik's model of education for future creation (Naik, 1982). Pedagogy of Social Reconstruction is divided in terms of its three components: people as actors (role-based learning); places considered in the situation linked with future scenario to be created; and problem-solving based learning.
- The *fourth lesson* is to make education life centric. We approach the problem by defining life process in terms of outcomes of the Four Pillars of Learning offered by UNESCO. This results into the Path of Life with a chain of Processes:

*Learning → Development → Value Creation → Reform / Transform*

New Education enables the creation of value by using cooperative and collaborative living and working. These processes enable to create the Social Commons (Commonwealth) to pay for Free & Open Education and Development shared by all.

## NATION WITH ITS HUMAN SETTLEMENTS AND THEIR FUTURE

A nation lives in its human settlements. A tribal community was living in Pada, a small settlement of tribal people surviving on natural resources. With the development of experience based agro-science, settlements started living in villages by ensuring their safety and security, and creating food for their livelihood. Agrarian society was living and growing in villages, and continued to live for the last 8-10 thousand years.

The first machine running on steam engine was created first by scientists and engineers in the 18th century. It was used to create railways, steam-ships for sea navigation, and started factories in cities wherein people came in from rural areas for jobs. With factories, mass production process had begun. This 19th century picture was changed with change in energy resources for machines, and sub-urbanisation started in the 20th century. All these are due to technology changes, the tools and techniques of which were used in living and working functions of a society (*Shirky, 2008*). The third and fourth digital technology revolutions created new digital processes (based on mobile digital technologies); and now new digital gadgets such as robots, IOTs (internet of things) or smart things and drones thus covering production, and communication and transportation fields of development (*Greengard, 2015*). Global networks of Internet connection with 4th and 5th generation communication technologies have inducted AI (Artificial Intelligence) based gadgets at living and working places. They are offering facilitations in creating an entirely new society in which *plenty* and *non-working class* could be created. Future of humans could be ensured by giving each one enough for their minimum bio and social needs (*Maslow, 1943*) and creating a new culture to live peacefully and creatively in a digital society (*Takwale, 2018*).

Digital Society's human settlement can be conceived to be a 'Cillage' or city in a village. Basic needs are constantly changing with the onset of every new age. Maslow's Hierarchy of Needs (Maslow, 1943) can be fulfilled by the factories or workshops which are run by smart robots and things. An entirely different society—a digital

society of the 5th Digital Industrial Revolution – is emerging within the next 10-20 years.

Maslow’s hierarchy of needs – Lower and Higher needs – modified for the modern times are:

1. Lower External Needs *Bio Needs* – Water, Food, Clothes, Shelter for every one
  - *Social Needs*–Sense of Belonging and Love
2. Higher Internal Needs:
  - *Scientific Needs* — Causal& Rational Thinking
  - *Aesthetics and Self-Actualisation Needs*

When robots and other technology tools are producing enough to fulfil each one’s lower needs, all can be brought on the level of social equality in a society and nation.

Fulfillment of higher needs will need personalised freedom and creativity, so as to develop the new age and new society. Issues like poverty, hierarchy due to different needs and elitism could be addressed by creating a new social culture.

For fulfilling human needs, everyone has to work for fulfilling the lower and higher needs. A culture of DIY or Do-It-Yourself has to be created. Achievements in personalised and socially essential needs can be fulfilled by many and can have higher achievements. This adds competition amongst all to rise to higher achievements.

Man is a thinking animal. And a cause of thinking in brain is either external or internal need, which creates self-motivation. Motivation is a force generated, which could be represented by the mind— a virtual representation of motivation. Mind or motivation directs the body’s action in real time. The relationship between thinking and acting is important in considering human action or inaction (*Takwale, 2018*).

During the 19th and 20th centuries, we had two distinct developmental models: one of capitalist society, and the other of communist society. There are many shades of combinations in democratic and socialistic models helping nations to create their distinct cultures and society.

Every age has a new culture and different tools and techniques are to be used in life and work of humans—in individual, social and national life. With scientific advancements using digital technologies, every society and country can find a path for individual and society dependent on its historical and cultural ethos (*Schwab, 2016*).

The 5th Industrial Digital Revolution can help us to reconstruct a society that solves the long-standing problems of elitism, hierarchical nature, and poverty of society (*Naik, 1982*). Since advanced robots, smart things, and drones will be changing the nature of life and work, a society whose external basic needs of bio and social nature of all could be created and fulfilled by using AI-based gadgets (*Takwale, 2020*). This needs a national policy to create a society whose minimum physical needs can be solved by the newer AI-based gadgets working in factories and workshops. This can create scenario of *plenty and non-working* class. However, such societies created by nations and civilisations faced problems of self-destructing tendencies and had to adopt entirely different ways for their survival.

The 5th Industrial Society has a different nature. For the first time in Industrial Revolution brought about by the First Machine (auto engine in 1st and 2nd revolutions) and Second Machine (digital engine in 3rd and 4th revolutions), the order of social formation has changed and reversed its nature. Mass Revolution is first and Class Revolution comes later. This has reversed the direction of change in social structures.

Human motivations can also be classified into two: one for fulfilling external needs, and another for internal needs. Everyone can be given the opportunity to be autonomous, free and creative, to change and impact socio-economic and cultural development. This can be considered as the Third Gandhian Model of Development. External basic needs are fulfilled for each one. For higher internal needs, everyone can choose one's own path, individually and in groups/communities, and achieve higher cultural levels in scientific development, aesthetics and in self-actualisation (*Takwale, 2020*).

After every change in age and in new society formation, basic needs change. In the Digital Age and Society, there are additional needs for

safe and secure living, and humans needs to live and work with new digital technologies are essential, so as to progress in the new modern age.

*Human and Hierarchy of Needs:* Bio, social, scientific and aesthetics' needs and self-actualisation.

*Natural and Environmental Needs:* Clean water and air, healthy soil to live and grow food with essential ecology maintained for human living and progressing.

*Digital Technological Needs:* WiFi, Internet and access gadgets are essential for moving towards the New Normal Society of the New Age.

### THIRD MODEL OF DEVELOPMENT FOR INDIA'S FUTURE CREATION

The Education Commission has named its report: *Education and National Development*. While identifying the failures of some of the policies in implementation, JP Naik noted the absence of the Third or Gandhian Type of Model of Development, besides the Capitalistic and Communistic Developments. It appears from above that the Third Model has to wait for the implementation of AI-based Digital Industrial Revolution. It will require fulfilment of needs of human, natural and digital technologies in a society whose model of development can be based on Gandhian principles. New AI-based society will be decentralised, will use renewable energy, and can help us to take all the techno-development to the village or now *cillage*. Gandhian approach of '*Back to the Village*' changes to '*Forward to the Cillage*'.

### CONCLUSION

Essentially, the Third Gandhian Model establishes autonomous and self-reliant Cillages in some areas in educational and technological development (*Takwale, 2020*). It connects all with global and universal internet connectivity, and ways of learning from all the world, but creating a culture and ways of developments of its own

in peaceful and humanistic ways. This is because the new education model in the digital society is based on the principles of Mahatma Gandhi's *Nai Talim* and JP Naik's *Model of Future Creation*. The model of New Education in Digital Society and New Model of Development of External and Internal Nature form the basics of the New Normal in the AI-based digital society.

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# NATIONAL EDUCATION POLICY 2020: STRATEGIES AND ACTIONABLE POINTS FOR IMPLEMENTATION

**Mahesh Verma**

*In order to align India to become a knowledge economy and affluent society, developing holistic individuals with a prescribed set of skills and values at each stage of learning is crucial. NEP--2020 has 10 big ideas among many for reimagining the higher education sector namely, World-class Education, Holistic and Multi-disciplinarity Education, Liberal Education, Transforming Regulatory System, Expansion with Quality, Access and Inclusion, Governance, and Leadership, Enhancing GER, Fostering Research and Development, Mainstreaming Vocational Education, Consolidating and Strengthening Teacher Education. This requires revamping curriculum, pedagogy, and assessment system; ensuring merit-based appointments and career progression for faculty; creating inclusion at all levels of education including higher education, and most importantly, ensuring quality in universities and colleges. A policy will just remain a policy on paper till it is acted upon. For successful implementation of the Policy, proper planning and delineation of the tangible action points are essential. This Paper presents a detailed discussion on the actionable points from the perspective of the Government, HEIs, and other stakeholders to help them prepare their action agenda*

## PRELUDE

The Union Cabinet approved the National Education Policy –2020 (NEP—2020) making way for large-scale, transformational reforms in both school and higher education sectors. This is the first education policy of the 21<sup>st</sup> century and succeeds the thirty-



four-year-old National Policy on Education (NPE), 1986. Built on the foundational pillars of Access, Equity, Quality, Affordability, and Accountability; this policy is aligned with the 2030 Agenda for Sustainable Development and aims to transform India into a vibrant knowledge society and global knowledge superpower by making school and college education more holistic, flexible, and multidisciplinary. Some of the prominent reflections of NEP-- 2020 are:

1. Transform the intent and content of the education sector;
2. Shift the burden of school bags to the boon of learning;
3. Integrate ‘local’ with ‘global’;
4. Make youth ‘future ready’ while focussing on national goals;
5. Ensure that students become Global Citizens while remaining connected to their roots;
6. Shift focus from ‘what to think’ to ‘how to think’;
7. Empower Higher Education Institutions (HEIs) through increased Autonomy;
8. Emphasis on Teacher Training.

A policy will just remain a policy on paper till it is acted upon. For successful implementation of the policy, proper planning and delineation of the tangible action points are essential. A detailed discussion on the actionable points from the perspective of the Government, HEIs, and other stakeholders is presented here to help them prepare their action agenda. Some of the broad outcomes and the actionable agenda set forth are presented in Table 1.

**Table-1: Actionable Agenda for Implementation of NEP--2020**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected Timeline (years)	Remarks
1	P/3 - To have an education system by 2040 that is second to none	Achieving full human potential, developing an equitable and just society, and promoting national development.	State Government/ Central Govt/ Colleges/ Universities	10-20	Requires synergized efforts and initiatives by all stakeholders
2	P/3 - Equitable access to the highest quality education for all learners regardless of social or economic background	Inclusive growth and higher GER with social equity	State Government. / Central Govt/ University System	2-10	Enable students from socially and economically backward categories to join higher education

## QUALITY UNIVERSITIES AND COLLEGES

In order to align India to become a knowledge economy and society, developing holistic individuals with a prescribed set of skills and values at each stage of learning is crucial. This requires revamping curriculum, pedagogy, and assessment system; ensuring merit-based appointments and career progression for faculty; creating inclusion at all levels of education including higher education, and most importantly, ensuring quality in universities and colleges. Some of the action points pertaining to this parameter are presented in Table 2.

**Table-2 Actionable Points to Ensure Quality in Universities and Colleges**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	9.1.1 and 9.1.2 - Develop holistic individual by incorporating an identified set of skills and values at each stage of learning	The students will develop character, values, scientific temper, curiosity, creativity, ethics, and spirit of service with honesty, employment, and entrepreneurship skills.	University System	2-10	There is a need to introduce compulsory inputs on character building, employment, entrepreneurship, and life skills.
2	9.1.3-To enable the development of a socially conscious and skilled nation that can find solutions to its own problems	Emerging of a more vibrant, socially engaged, productive, innovative, and prosperous nation.	University System	2-20	Universities to engage in knowledge creation and innovation and creation of greater opportunities for individual employees.

## INSTITUTIONAL RESTRUCTURING AND CONSOLIDATION

The main focus of the policy is to integrate professional and vocational education through the transformation of existing higher education institutions into large multidisciplinary universities, colleges, and institutional clusters or knowledge hubs. This includes a series of actions by all the stakeholders and government to derive the benefits anticipated in this policy and align with Sustainable Development Goal 4 (SDG4). The details of the actions required to be initiated are presented in Table 3.

**Table-3: Actional Points on Institutional Restructuring**

S. No.	Actionable Point(with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1.	10.1 - Transforming higher education institutions into large multidisciplinary universities, colleges, and HEI clusters/ Knowledge Hubs	Vibrant student and research communities of scholars and peers to become well-rounded across multiple disciplines	Central Government/ State Government	2-20	
2	10.2 and 10.3 - Moving to large multidisciplinary universities and HEI clusters	Redefining Universities as either Research-intensive or Teaching-intensive Universities.	Central Government/ State Government.	5-15	This will enable the autonomous degree granting colleges with proper accreditation to be able to upgrade to research-intensive or teaching-intensive universities and do away with the current affiliation system.
3	10.4 and 10.5 - A stage-wise mechanism for granting graded autonomy to colleges through a transparent system of graded accreditation	The affiliated institutions to the Universities shall cease to exist	State Government/ Central Government/ University System	5-15	The accreditation of colleges is essential for becoming autonomous degree-granting institutions in a gradual manner.
4.	10.6 - Additional Responsibility for HEIs	Supporting other HEIs in their development	State Government/ University System	3-10	Universities will support colleges to enhance their capacity.
5.	10.7- Transforming/ Establishing at least one HEI into the large multidisciplinary institution and capacity creation	Availability of at least one multidisciplinary HEI in every district for higher equity and inclusion	State Government /Central Government/ University System	3-20	This requires transforming / setting up at least one quality multidisciplinary HEI in all districts with increased student strength
6.	10.8 - Medium of instruction in local/ Indian language/ bilingual	Full access, Equity, and inclusion to all, with teaching-learning material in local/Indian languages.	State Government/ University System	2-15	The teachers are to be recruited in local languages to deliver teaching in bilingual mode.
7.	10.9- Growth in both public and private institutions	A fair and transparent system of determining increased funding support for Public HEIs	State Government/ Central Government	5-20	Incentivizing performance-based funding mechanism from State Government based on identified shared Key Responsibility Areas(KRAs) either independently or as a part of Accreditation criteria.

S. No.	Actionable Point(with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
8.	10.10 - Option to offer/run programmes in Open distance learning (ODL) or online learning mode	Provide online courses that can be pursued at a convenience	State Government/ Central Government/ University System	2-10	Identification of accredited HEIs offering ODL courses and encourages the development of online courses along with their integration into curricula.
9.	10.12 - Single stream HEIs will be phased out	Focus on multidisciplinary programmes and research	State Government/ Central Government/ University System	5-20	Single stream Universities are required to offer multidisciplinary programmes/ research
10	A concerted national effort including suitable mentoring and government support	Colleges will achieve minimum benchmarks in academic and curricular matters	State Government/ Central Government/ University System	2-15	Universities need to make efforts to achieve minimum benchmarks through academic audit system.

## TOWARDS A MORE HOLISTIC AND MULTIDISCIPLINARY EDUCATION

The Policy aims at adopting liberal arts approach to develop the intellectual, aesthetic, social, physical, emotional, and moral capacity of human beings. This is planned through the integration of humanities and arts with Science, Technology, Engineering, and Mathematics (STEM) education at the undergraduate level in all professional, vocational and technical disciplines. Some of the action points are listed in Table 4.

**Table-4: Actionable Points for Developing Holistic and Multidisciplinary Education**

Sr. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	11.5 -Imaginative and flexible curricular structures will enable creative combinations of disciplines	Create cross-disciplinary and multidisciplinary lifelong learning among all.	University System	3-15	Multiple entry and multiple exit options in various schemes of programmes with CBCS are required to be adopted in University.

Sr. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
2	11.6- Increased faculty and institutional autonomy in setting curricula	More effective curriculum and pedagogy with contemporary contents	State Government/ Central Government/ University System	3-10	University autonomy and involvement of affiliated colleges are to be undertaken both for curriculum design and pedagogical tools.
3	11.7 -Departments in Languages, Literature, Music, Philosophy, Indology, etc. will be established and strengthened at all HEIS	Holistic development of the students	State Government/ University System	3-10	University will have to set up liberal arts departments to offer choice-based courses with a system of credit transfer including ODL courses
4	11.8- Innovative curricula of all HEIs shall include credit-based courses and projects	Holistic development of students with lifetime value.	University System	2-10	National Service Scheme (NSS) and more Credit-based courses and projects need to be introduced.
5	11.9- The structure and length of the degree programme shall be adjusted accordingly.	More flexible education with multiple entry and exit with academic bank of credits	University System	3-10	University has to realign programmes with a flexible structure
6	11.10- HEIs will have the flexibility to offer different designs of master's programmes.	More flexible educational and research opportunities for talented students	University System	3-10	Discontinue M.Phil programme from University. Make the master/research programme admission requirements more flexible and open.
7	11.11- Model public universities for holistic and multidisciplinary education set-up called MERUs (Multidisciplinary Education and Research Universities)	Understand and develop global quality practices/ research in education	State Government/ Central Government	2-15	University is required to sign up for global linkages in education and research with global practices and rankings.
8	11.12 -HEIs focus on research and innovation	The creative and innovative culture among students with an entrepreneurial mindset	State Government /Central Government/ University System	1-10	University needs to set up Startup Incubation Centre for students, Technology development Centres with Industry, and MoUs with industry for funding of ideas and Innovation

## OPTIMAL LEARNING ENVIRONMENTS AND SUPPORT FOR STUDENTS

Effective learning requires an integrated and comprehensive approach toward curriculum design, effective and engaging pedagogy, and

continuous and formative assessment backed by strong student support. Some of the action points are listed in Table 5.

**Table-5 Action Points for Maintaining Optimal Learning Environments**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	12.2 -Institutions and faculty will have the autonomy to innovate within a broad framework of higher education qualifications with Choice based credit system (CBCS)	Stimulating and engaging flexible learning curricula in line with the industry's need to encourage holistic development	State Government/ University System	2-10	University needs to move towards comprehensive and continuous evaluation with the use of CBCS and flexible and contemporary curricula
	HEIs shall move to a criterion-based grading system that assesses student achievement based on the learning goals for each programme.	More flexible continuous assessment rather than rigid structures	State Government./ University System	2-10	Criteria-based grading system with a focus on learning goals assessment in a continuous and comprehensive model to be adopted.
2	12.3 -Each institution will integrate its academic plans into its larger institutional Development Plan (IDP)	Holistic development of students with contribution towards institutional development.	State Government/ University System	2-15	Academic planning has to go hand in hand with the achievement of the vision and mission of the Institution.
3	12.4 -High-quality support centres and professional academic and career counseling will be made available to all students, as well as counselors.	Students from diverse social backgrounds and disadvantaged groups will be able to smoothly transit to higher education through this engagement	State Government/ University System	2-15	Students' Counselling centre are to be set up to address their physical, psychological, and emotional well-being.
4	12.5 -All programmes, courses, curricula, and pedagogy across subjects, will aim to achieve global standards of quality	Will enable wider access to quality education and achieve higher GER	State Government/ Central Government/ University System	2-20	Norms, standards, and guidelines for systemic development, regulation, and accreditation of ODL will have to be prepared.
5	12.7 -India will be promoted as a global study destination providing quality education at affordable costs	Internationalization of education with mobility to and from India in education and research	State Government/ Central Govt/ University System	2-10	Greater mobility to students in India who may wish to visit, study at, transfer credits to, or carry out research at institutions abroad, and vice versa.

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
6	12.8 -An International Students Office at each HEI will be set up to coordinate all matters relating to students arriving from abroad.	India to become a global study destination with a presence in other countries as well.	Central Govt/ University System	2-20	International Affairs Directorate to be set up and further needs to be strengthened with some more facilities for foreign students.
7	12.9 -Vibrant campus life is essential for the high-quality teaching-learning process.	Holistic development of students with active participation in campus activities.	State Government./ University System	2-20	University has to further strengthen all facilities along with quality medical facilities
8	12.10 -Financial assistance to students shall be made available through various measures	Assistance to students from disadvantaged groups for access, inclusion, and higher GER.	State Government/ Central Government/ University System	2-10	Efforts will be made to incentivize to bring into the fold the students belonging to SC, ST, OBC, and other SEDGs.

## MOTIVATED, ENERGIZED, AND CAPABLE FACULTY

The faculty is an important stakeholder in the educational system. Their quality and engagement are very crucial to achieving the goals. Some of the initiatives required are: faculty motivation, fair recruitment, and career progression, pay compensation, professional development opportunities, equitable representation, etc. Some of the action points for nurturing this are described in detail in Table 6.

**Table-6 Some Actionable Points for nurturing Motivated, Energized, and Capable Faculty**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	13.2 -As the most basic step, all HEIs will be equipped with the basic infrastructure and academic ambiance	Improved / happy teaching-learning experience of students and teachers	State Government/ University System	1-10	Campus and classrooms to be equipped with smart educational technologies and teaching aids with modern ambiance infrastructure, and supplies.
2	13.3 -Teaching hours are not to be too excessive as well as good student-teacher be maintained	Faculty will own up the institution and will remain committed and invested in the institution	State Government/ University System	5-15	Good Student-teacher Ratio to be ensured with adequate load balancing to enable sufficient time for teaching and research.

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
3	13.4- Empowering the faculty to conduct innovative teaching, research, and service	A more flexible choice of pedagogical tools will result in effective teaching-learning and creativity	University System	5-15	Faculty to be given freedom in devising and using pedagogical tools to suit their course requirements.
4	13.5 -Incentivizing the excellence of faculty	Motivational schemes for faculty will result in the promotion and development of institutional leadership with accountability.	State Government./ University System	3-10	University has to set up a reward and recognition scheme for students, faculty, and non-teaching staff.
5	13.6 -A clearly defined, independent, and transparent processes and criteria for faulty recruitment, a fast-track promotion system for recognizing high-impact research and contribution	Timely and fair recruitment and promotions will drive excellence	State Government/ University System	2-10	A timely promotion system is to be in place to ensure improved performance
6	13.7- Excellent faculty with high academic credentials as well as demonstrated leadership skills training through a ladder of leadership positions	Nurturing leadership is desired for excellence, innovation, and growth	State Government/ University System	2-15	Persons having high credentials be appointed to the leadership positions such as Deans/ Directors and other heads.

## EQUITY AND INCLUSION IN HIGHER EDUCATION

The implementation of this policy aims at providing equitable access to quality education to all students in alignment with SEDGs. This will lead to higher GER and inclusiveness, covering all sections of the society with the help of technology interventions. Some of the actions to be taken are listed in Table 7.

**Table-7 Strategies to Ensure Equity and Inclusion in Higher Education**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	14.4.1 -Earmark suitable Government funds for the education of SEDGs	Equitable access to education with higher GER	State Government/ Central Government	2-20	University has created a corpus to support SEDG
	Set clear targets for higher GER for SEDGs	Equitable access to education	State Government/ Central Government	-	-



S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
	Enhance gender balance in admission to HEIs	Equitable access to quality education	State Government/ Central Government	5-10	Universities need to adopt reservation of seats for girls to ensure gender balance
	Establishing the increased number of quality HEIs in aspirational districts and Special Education zones and extending financial support to disadvantaged groups	Equitable access to education and higher GER	State Government /Central Government/ University System	5-20	Provide scholarship and fee waivers to EWS students in both Government and SFS institutions
2	14.4.2- Conduct outreach programmes on higher education opportunities and scholarships among SEDGs	Equitable access to quality education and increased GER	State Government/ Central Govt/ University System	1-10	Conduct counseling sessions and career guidance activities and coaching for higher education and competitive exams.
	Develop and support technology tools for better participation and learning outcomes.	Equitable access to quality education	State Government./ Central Government/ University System	1-5	The latest Technological tools for disadvantaged groups need to be acquired by universities.
	Make admissions processes, physical facilities, fees and learning processes simple, accessible, affordable ,and more inclusive	Equitable access to quality education	State Government/ Central Govt/ University System	2-15	The admission process of the Universities must have provision for reserved seats for all disadvantaged groups.
	Sensitization of faculty, counselors, and students on gender identity issues and its inclusion in all aspects of the HEI	Equitable access to quality education	State Government./ University System	3-10	Faculty and students should be part of the scope of gender sensitization committee
	Strictly enforce zero or no-discrimination and anti-harassment rules	Equitable access to quality education	State Government/ University System	2-15	University should have a strict well-defined zero-tolerance policy against any kind of discrimination.

## TEACHER EDUCATION

As teacher education requires multidisciplinary inputs, this must be offered in multidisciplinary institutions. The 4-year integrated B.Ed. can be offered in multiple formats with 1 or 2 years based on educational background. A national mission for mentoring is proposed comprising senior or retired teachers for supporting the university/college teachers' in pedagogy, use of technology, concept development, etc. Some of the action areas are listed in Table 8.

**Table-8: Action Points for Making Teacher Education Relevant**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	15.2 - Regulatory System shall be brought in and empowered to take stringent action against substandard and dysfunctional teacher education institutions (TEIs).	Restore integrity, credibility, efficacy, and high quality in teaching	State Government/ Central Government/ University System	3-10	Academic audit to be further strengthened in TEIs
2	15.4 -Establishment of an Education Department in All Multidisciplinary universities and colleges	Will result in multidisciplinary inputs from various schools/ departments/ centers	University System	3-10	Undertake both the research and run B.Ed. program in collaboration with other departments.
3	15.5- The HEI offering the 4-year integrated B.Ed. may also run a 2-year B.Ed. or a 1-year B.Ed.	Multidisciplinary and high-quality education and pedagogy inputs. Flexible B Ed programme structure	State Government/ Central Government/ University System	3-10	4-year integrated multi-entry and multi-exit B.Ed. programme to be considered with the flexibility of 2-year and 1-year options with specializations.
4	15.6 -Each higher education institution will have a network of schools to work closely with	Availability of experienced teachers in education	State Government/ Central Government/ University System	3-10	Tie-ups of B Ed and MED institutions with Schools to be put in place
5	15.7 - Admission to the pre-service teacher preparation program shall be through standard subject and aptitude tests conducted by the National Testing Agency	Uniform standards for teacher education through standard subject and aptitude admission test	State Government/ Central Government/ University System	3-10	University needs to adopt the test for admission in the local language.
6	15.8 -Departments of Education will strive to be diverse.	Conceptual development of budding teachers through faculty training in social sciences	State Government/ Central Government/ University System	3-10	Recruitment of diverse faculty with training in social science to make an improved impact.

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
7	15.10 -The use of technology platforms such as SWAYAM/DIKSHA for online training of teachers will be encouraged.	Faster and large resource pool training using technology for continuous professional development	State Government/ Central Government/ University System	3-10	Use of online courses/platforms for in-service training of teachers
8	15.11- Providing short and long-term mentoring/ professional support to university/college teachers.	Mentoring support to faculty by experienced senior/retired faculty	State Government/ Central Government/ University System	3-10	University may appoint faculty with good experience in Indian languages.

## VOCATIONAL EDUCATION

In order to integrate vocational education into mainstream education with clear pathways, the policy envisages its inclusion in a phased manner based on skill gap analysis and local opportunities. The recommendations of the constituted National Committee for the Integration of Vocational Education (NCIVE) would be critical to enabling HEIs to adopt best practices in the domain. Some action points for the same are listed in Table 9.

**Table-9: Some Action Points for Mainstreaming Vocational Education**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	16.5 -At least 50% of learners through the school and higher education system shall have exposure to vocational education	Integration of vocational subjects into mainstream education to bridge the social gap	Central Govt	3-10	Setting up of the National Committee for the Integration of Vocational Education (NCIVE)
2	16.5- Vocational courses will also be available to students enrolled in all other undergraduate programmes, etc.	To popularize vocational stream and its knowledge available to all for achieving GER targets	State Government/ Central Government/ University System	3-15	Universities need to modify the program scheme for a graduate program to allow vocational subjects to be offered to all
3	16.5- HEIs allow to conduct of short-term certificate courses in various skills	Flexible short-term certificate courses to improve soft skills, life skills, etc.	Central Government/ State Government/ University System/ Industry	1-10	Universities to offer short-term courses in soft skills and other related domains

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
4	16.5 'LokVidya', i.e., important vocational local knowledge developed in India, will be made accessible to students	Integration of vocational education for all and meet skill gaps with the development of local skills	State Government/ Central Government/ University System	2-10	Universities need to modify the program scheme for a graduate program to allow vocational subjects to be offered by all
5	16.8 Dropouts from the formal system will be reintegrated by aligning their practical experience with the relevant level of the Framework.	Mobility across programs with multi-entry and multi-exit through a credit-based system	State Government/ Central Govt/ University System	2-10	Reorientation of B.Voc. framework to allow exemptions in admission with experience of industry/trade

## CATALYZING RESEARCH IN UNIVERSITIES AND COLLEGES

For India to become a knowledge society with its vast talent pool, expansion and strengthening of multidisciplinary and socially oriented innovation and research capabilities with clear research targets are essential. The Policy undertakes to achieve the goal by setting up National Research Foundation (NRF) with the support of industry and private/philanthropic organizations and to bring about synergy in the whole innovation and research ecosystem. Some of the action points are listed in Table 10.

**Table -10: Action Points for Catalysing Research in Higher Education Institutions**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	17.8 -Definitive shifts in school education to a play and discovery-based style of learning.	Comprehensive encouraging environment for research and innovation with a research mindset	Central Government/ University system	2-10	Including innovation and research-based curriculum at the Undergraduate level.
2	17.9 -Establishing NRF	Will enable quality research in all disciplines for growth and self-reliance	Central Government/ State Government	2-10	Participation of Industry and other related private and philanthropic organizations

## TRANSFORMING THE REGULATORY SYSTEM OF HIGHER EDUCATION

The regulatory system of higher education has been facing many problems and issues. The Policy has provisions for independent yet synergized functioning of four vertical structures with clear roles and responsibilities under the Higher Education Commission of India (HECI). The extensive role of technology in all functioning to bring transparency, curbing commercialization, and efficiency is strongly underlined. Some important action points are listed in Table 11.

**Table-11: Actionable Points for Transforming the Regulatory System of Higher Education**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	18.2 -Setting up the Higher Education Commission of India (HECI)	Single control over main pillars of education and eliminating conflicts of interests in different roles	Central Government	2-10	-
2	18.3 -Setting up National Higher Education Regulatory Council (NHERC)	Distinct, independent, and empowered bodies	Central Government	2-10	-
3	18.4 -Setting up National Accreditation Council (NAC)	Meta-accrediting body of HECI providing ecosystem for accreditation	Central Government	2-10	-
4	18.5 -Setting up Higher Education Grants Council (HEGC)	Funding of higher education for disbursal of development grants and scholarships	Central Government	2-10	-
5	18.6 -Setting up General Education Council (GEC)	Framing of learning outcomes of Higher Education	Central Government	2-10	-
6	18.7 -Restructuring of ICAR, VCI, NCTE, CoA, and NCVET as Professional Standard-Setting Bodies (PSSBs)	Uniform professional standards across the country due to cultural and linguistic diversity	Central Government	3-10	-
7	18.10 -Adopting an online Self-disclosure based Transparent System for granting approval to institute(s) and colleges	Efficient and effective technology and public disclosure-based transparent approval system	Central Government/ State Government/ University System	5-20	

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
8	18.11 -Setting up new quality HEIs will also be made easier by the regulatory regime.	Quality institutions shall be financially supported by Government institutions to attain higher GER and expansion.	Central Government/ State Government/	5-15	-
9	18.12 -Multiple mechanisms with checks and balances will combat the commercialization of higher education.	Commercialization of higher education will be controlled through transparent public disclosures on financial matters	Central Government/ State Government/ University System	5-15	Technology-based public disclosures on financial matters with grievance handling mechanisms to be evolved.
11	18.13- All HEIs shall be treated on the part of this regulatory regime.	Common guidelines and norms for private and public institutions	Central Government/ State Government	5-15	Revised norms for assessment and setting up of Private and Public institutions to be formalized with no discrimination.
10	18.14 -Develop transparent mechanisms for fixing of fees with an upper limit.	A transparent system of fee fixation with the capping of fee and no arbitrary fee being charged	Central Government/ State Government/ University System	5-15	Fee Regulatory committee to be constituted by every institution as per regulatory guidelines.

## EFFECTIVE GOVERNANCE AND LEADERSHIP

Effective governance and leadership are prerequisites for the success of any institution. The top leadership provides an encouraging environment and culture for innovations in academics and research. The institutions through the channel of graded autonomy will move to become independent self-regulated institutions and will strive for innovation and excellence. Some of the action points are listed in Table 12.

**Table -12: Action Points for Effective Governance and Leadership**

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
1	19.4 Leadership positions shall be offered to persons with strong academic qualifications and proven leadership abilities	A rigorous, merit-based selection process enabling proper succession planning and no vacuum at top positions	Central Government/ State Government/ University System	3-15	

S. No.	Actionable Point (with reference to NEP policy document)	Expected Output	Action Agencies	Expected timeline (years)	Remarks
2	19.5 Each institution will make a strategic Institutional Development Plan (IDPs)	Local community and institutional development through innovation and excellence	Central Government/ State Government/ University System	3-10	IDPs to be prepared for public funding

## CONCLUSION

NEP-2020 with its primary focus on access, equity, quality, affordability, and accountability is aiming to ensure that Indian students become global citizens while remaining connected to their roots. It encompasses provisions for better learning and employment outcomes for the younger generation through various initiatives and targets set forth in the policy. However, the success of this policy depends largely upon the implementation as well as the seriousness of the efforts of the stakeholders. The budgetary allocations are meaningless unless accompanied by proper planning and execution of the key aspects of the policy. The clear roles and responsibilities articulated in the form of action points for the HEIs, state governments, and central government hold the key to the success of these transformational initiatives, to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, multidisciplinary, suited to 21st century needs and bringing out the unique capabilities of each student.

# OPEN AND DISTANCE LEARNING FOR MEETING ACCESS CHALLENGES IN IMPLEMENTATION OF NATIONAL EDUCATION POLICY–2020

Ami Upadhyay

*Higher Education in India is afflicted with several gaps due to which it is not able to meet the requirements and current demands of the university's youth. The NEP–2020 has the potential to fulfill these gaps and provide state of the art education. The success of the Policy however depends on its efficient implementation. The Policy envisions transforming higher education institutions into large multidisciplinary universities with more than 3,000 or more students each. This transformation requires a huge investment in terms of not only infrastructure but human resource too. The structure and system of Open and Distance Learning Institutions with study centres across the country can play a great role in meeting these requirements cost effectively. They will not only be limited to offering regular graduate and postgraduate programmes, but also be the facilitators in research activities and teaching multidisciplinary and skill-oriented courses.*

## PRELUDE

National Education Policy–2020 released under the flagship of present Indian Government is forward-looking and aims to fulfill the requirements of 21st century Bharat. It has the holistic aim of transforming the nation to a “more vibrant, socially engaged, cooperative community and a happier, cohesive, cultured, productive, innovative, progressive and prosperous nation” (NEP–2020). It covers the targets of Sustainable Development Goals as well. The success of the policy however, depends on its successful implementation. The



policy recommends institutional restructuring while overhauling the whole Higher Education System. This article examines the policy's vision in the purview of the higher education system and aims to provide solutions for realising the same through intervention with Open and Distance Learning.

## **IMPLEMENTATION STRATEGIES**

India has received its holistic and visionary National Education Policy–2020 after a gap of 34 years. Nevertheless, the policy would be successful only if it is implemented efficiently. India is currently facing several grass-root level issues such as high level dropout rate, meagre 26.3 percent Gross Enrolment Ratio (GER), acute crisis of quality, access, equity, etc., particularly in higher education. The system so far has not succeeded in setting the house in order. Moreover, with the fast developments in Information and Communication Technology (ICT) and the policies of Liberalisation, Globalisation and Privatisation, there is an urgent need to create global citizens who can work towards the development at local, regional, national and global levels. Obviously, new India requires new approaches to shape the higher education system and the policy's vision, mission and aims must find a ground for its successful implementation through new approaches. One of the approaches which the author finds befitting is mainstreaming of Open and Distance Learning approaches to improve the system both qualitatively as well as quantitatively. In this article it was attempted to identify how Open and Distance Learning (ODL) system can reinforce the implementation of National Education Policy–2020. Some of the recommendations along with implementation strategies using ODL approaches are presented here.

## **LARGE MULTIDISCIPLINARY UNIVERSITIES**

The policy envisions transforming higher education institutions into large multidisciplinary universities with more than 3,000 or more students. This transformation requires a huge investment in terms of not only infrastructure but human and other resource also. In

the current scenario, it is becoming difficult for the Government to provide sufficient funds for infrastructure and manpower.

Open and Distance Learning universities can come as a support in meeting this requirement cost-effectively through their structure and system study centres. In case of state universities, the study centres cover the entire state. In case of National Open University, the study centres are spread throughout the country. Study Centre means a centre established, maintained or recognised by the University for the purpose of advising, counselling, training or for rendering any other assistance required by the students. Generally, the buildings, infrastructures and manpower of already established formal institutions are recognized as study centres, therefore the cost is reduced to a large extent. In India, there are 16 State Open Universities including two new ones in Punjab and Kerala. They are spread across vast geographical areas, covering every district as well as urban and rural areas in the state they are established. Unlike conventional universities and colleges, the ODL Institutions need not delimit number of seats for admitting the students in their courses. This again adds to reduction in costs. However, the ODL Regulations of University Grants Commission (UGC) and other regulatory bodies are in place which lay down norms for the number of students that can be admitted in order to ensure quality. Still the ODLs have scope for accommodating a large number of students. Open universities also have flexible system which allow them to offer a vast variety of courses ranging from arts, humanities, social sciences, languages, sciences, vocational and professional courses as well. India has a rich heritage of knowledge from ancient Indian universities like Takshashila and Nalanda, which were large multidisciplinary research and teaching universities. The legacy can be best implemented by central and state open universities of the nation.

## **RESEARCH AND TEACHING INTENSIVE UNIVERSITIES**

Since the policy lays equal importance on quality teaching and research-intensive universities, it widens the spectrum of functioning of universities. They will not only be limited to offering regular

graduate and postgraduate programmes, but also be the facilitators in research activities and teaching multidisciplinary and skill-oriented courses. Open universities may be able to execute these activities with more ease, as their faculty, academic counselors and expert resource persons are not confined to one particular premise. Also, many conventional universities are mostly categorised by a particular field, like Sports, Engineering, Technological, or Agricultural; Open Universities on the other hand are more flexible in this regard as through the online or offline modes they can offer courses on a wide range of subjects to students, and also cater to the local needs in the form of offering courses on local languages and local skills. In the 21st century, one is beginning to witness a shift towards ODL and Online Teaching and Learning, which has been emphasised by National Education Policy too. In fact, research through Open and Distance Learning or online modes will be of equal importance as that of formal modes. Open universities can play role as a centre or hub for the research on ODL or online teaching learning.

## COMMUNITY ENGAGEMENT

Community engagement is one of the key focus areas of this policy. Open universities can engage in different forms in community service and community engagement. Through the network of study centres, open universities can reach the unreached areas and districts. As a part of holistic education, local population can be enrolled in higher education by engaging them with local industry, businesses, arts, crafts, skills, etc. Environment education, value-based education, management of natural resources, sustainable development, etc., can be easily included in the list of subjects in curriculum and even a set of programmes with the same thrust area can be introduced by open universities to gainfully engage the youth and adults of rural and urban areas through study centres and regional centres across respective states. As a part of social responsibility, open universities also have the scope of adopting certain villages, wherein they will be responsible for education, spreading awareness and providing them with the basic rights. Girls and women can be encouraged,

trained and be imparted with skills to make themselves socially and economically independent. Open universities can create a group of mentors and educate them to create leaders of tomorrow. Hence, all-round community engagement is more feasible with the structure and system of open universities.

### **GROSS ENROLMENT RATIO**

The policy also aims to increase the Gross Enrolment Ratio in higher education from 26.3 percent (2018) to 50 percent by 2035. It says, “More HEIs shall be established and developed in underserved regions to ensure full access, equity, and inclusion. There shall, by 2030, be at least one large multidisciplinary HEI in or near every district” (NEP–2020). Gross Enrolment Ratio is one of the major challenges that our nation is striving to meet. In this field also, open universities reach out to the under-served regions, where conventional universities have lesser scope. Growth, development and strengthening of open universities can efficiently attract a larger student enrolments. Open universities have a pedagogy which can cater to a number of students by engaging them with self-learning material, academic counseling, extra-curricular and co-curricular activities, training and raising awareness, and more. The policy mentions establishing a large multidisciplinary HEI near every district. Open universities already have a network of study centres established in every district under their territory and this can make a note-worthy improvement in the Gross Enrolment Ratio of the state and eventually the nation.

### **PROMOTION OF CULTURAL STUDIES AND 64 KALAS/ARTS**

This visionary policy establishes that being well educated in one’s language, culture, and traditions is a huge benefit to educational, social, and technological advancement of an individual as well as that of the nation. There is a need to develop a curriculum and pedagogy in the coming years that are going to be strongly rooted in our local culture, tradition, heritage, custom, language, philosophy, and promoting traditional ways of learning. This policy aims at

resurrection of lost native treasures such as languages, arts and culture, which are the pre-requisites of creating globally competent, skilled and dynamic individuals. The Policy states: “Students are the prime stakeholders in the education system. Vibrant campus life is essential for high-quality teaching-learning processes. Towards this end, students will be given plenty of opportunities for participation in sports, culture/arts clubs, eco-clubs, activity clubs, community service projects, etc.” (NEP–2020).

Here, it is to draw one’s attention towards the roles and responsibilities of state open universities to promote the local culture relating to the State, with case of Dr Babasaheb Ambedkar Open University, Gujarat. Gujarat is a land of cultural richness and diversity, which is the pride or identity of Gujarat— ‘*Asmita* of Gujarat’. Each state open university can be encouraged and funded for establishing a cultural centre, which would be a holistic hub for teaching and research, and also be a reservoir of culture, known as State *Asmita* Centre like BAOU can establish ‘Gujarat *Asmita* and Research Centre’. Gujarat *Asmita* and Research Centre established by state open university will be able to further follow suggestions by the NEP fruitfully, having study centres/learner support centres across Gujarat with local staff and support.

Policy intends to develop HEIs that teach in local/Indian languages; People’s Linguistic Survey of India (PLSI) initiated by the Bhasha Research and Publication Center (BRPC) identified that, in Gujarat, 50 languages including 24 are spoken in tribal regions, 11 of nomadic communities and five from the coastal region. Gujarat is among six states in the country that have over 40 languages. Now, having Learner Support Centres in all these regions, it will be surely convenient as well as advantageous for open universities to work fruitfully.

Promoting local literature can be effectively done by state open universities. Well-known laureates of Gujarati literature are Hemchandracharya, Narsinh Mehta, Mirabai, Akho, Govardhanram Tripathi, Mahatma Gandhi, KM Munshi, Umashankar Joshi, Zaverchand Meghani and many more. Literature in the form of *bhajans*, *bhavais*, poetry, novels, and dramas are rich and picturesque,

depicting “*shaurya-gatha*” of Gujarat and its “*asmita*”. BAOU has UG as well as PG in Gujarati Literature and the same in Hindi and English too. Even the courses on Translation Studies add value to literature studies what the NEP talks about.

This will also provide impetus to Translation Studies, translation and interpretation of literary works, and serve as well as support the purpose and workings of the visionary establishment of Indian Institute of Translation and Interpretation with their wide pool of regional and international language experts. It shall encourage the translation of rich and uplifting literature of the nation and provide such books for the interested learners in regional languages. This will also translate great Gujarati literature in Hindi as well as English for the readers and researchers across the globe.

The policy also intends to mainstream the inevitable features of culture such as the knowledge of Music, Festivals, Art and Craft. Gujarati folk music, indigenous to the state, originating from the Barot, Gadhvi and Charan communities, is well-received across the globe. It will also resurrect the use of local musical instruments. Knowledge of festivals reawakens the lost rituals, customs and traditions which are closely related to ancient Indian knowledge systems and mythology.

Promotion of local art and craft, and handicraft skills, is another recommendation made by the policy; art and crafts of Gujarat are most unique and are not only popular within the Indian continent, but also across the world. This industry of art and crafts of Gujarat consists of a number of jewelry, metalwork, embroidery, furniture, clay items, handmade carpets (*durries*), stone crafts, and other materials. The brass industry in Jamnagar is considered to be one of the largest in India. There are a wide range of embroideries, such as Rabari, Bavaria and Banni embroidery, and Patola embroidery, which is the prime style that stands out from them all. Paintings, Warli art, Tangalia and Woodcraft are indigenous arts, which have turned into major industries. Activities like teaching-learning of art and craft shall promote the craftsmen, artisans, and generate trade and business of the local products. These activities will eventually lead to the success of ‘Make in India’ movement. Under Recognizing Prior Learning (RPL) Open university can introduce these skill courses

helping these industries to flourish as well as strengthening villages discouraging forced urbanisation.

National Education Policy–2020 talks of visiting another state for ten days to understand the culture of that state. In this case, state open universities can play the role as a link connecting to cultural study centres of that state. Through these state open universities, students can have easy access to education as well as its art and culture. In the case of Gujarat, the state has many Gujarats within it. Gujarati culture at Kutch is different from Gujarati culture at Dang-Aahava or Dharampur or Bhavnagar or Chota Udepur. So, a state open university if funded and directed in a proper way, can provide every facility related to cultural studies and research.

It will have everything that will help students to understand the languages, literature, history, mythology, food habits, habitats, art, lifestyle, etc. After staying with the university for three or four days, studying the culture and having a glance over it, the learner may choose to visit the part of Gujarat of his own choice.

Cultural studies should not be limited to the school level, but should be an important aspect of higher education as well. The structure and infrastructure of state open universities is such that it has a wider canvas in terms of access and reach to the masses of the state. Our university has a robust network of more than 200 study centres/regional centres across Gujarat, connecting major districts as well as interior belts.

Every year, the university enrolls thousands of students; hence, it has the potential to reach out to artists and craftsmen who shall teach arts and skills to generate employable individuals. It might not be possible for some universities to arrange for teachers/trainers for various languages under the three language formula described in National Education Policy–2020 or artists for 64 arts. In that case, Open Universities can do that quite easily by preparing course content, courses, programmes.

Further, not only higher education, but the policy has introduced the concept of teaching home language/regional language to children till the 5th Standard, in this scenario, state open universities

can offer their crash courses/certificate courses for training English medium teachers in regional languages. This shall be a suitable and cost-effective alternative for training teachers to teach in the local language.

Each state open university is linked with its study centres/regional centres across the state; in this situation, each centre can be a Language Lab for training teachers as well as Skill Lab with regards to the promotion of arts, languages and culture. For example, Kutch Centre of Dr Babasaheb Ambedkar Open University runs a Skill Lab for teaching Kutchi art, culture, language, handicraft, and local skills. Further, to know Gujarat means to know the cities and districts of the state such as Kutch, Dwarka, Champaner, Dang, Chhota Udaipur, Saputara, and more. Each one has its own local language, literature, culture, arts, handicrafts, skills, festivals, traditions, customs, rituals, belief-system, and more.

Moreover, state open university and its own cultural centre can be a potential one-spot destination, providing the flavour of the entire state of Gujarat in terms of Cultural Studies, Translation Studies, Promotion of Arts, Languages and Culture in all the possible forms and means as Gujarat attracts lakhs of tourists every year.

## CONCLUSION

Presently, there are 14+2 state open universities in India. If each state open university establishes its own cultural centre, it will prove to be a huge contribution in the successful implementation of National Education Policy–2020 with regards to the ‘Promotion of Indian Languages, Arts and Culture’. If state open universities offer their Cultural Studies courses and programmes in both online and offline modes across all study centres; it will fulfill the purpose of Choice Based Credit System and Academic Bank of Credit, such that a learner from any state can learn the culture of other states of the nation. Strengthening open universities shall surely increase Gross Enrolment Ratio, promote Open/Distance/Online Learning, and at the same time it will boost teaching-learning-research in the areas of Language/Art/Cultural Studies.



It can be culminated thus, that certain vital issues and challenges that our nation might face in the implementation of this forward-looking National Education Policy–2020 can be resolved with Open Universities and Open and Distance Learning system. The policy states, “It is through the development of a strong sense and knowledge of their own cultural history, arts, languages, and traditions that children can build a positive cultural identity and self-esteem.” (NEP–2020, pg. 53) Fact of the matter is that cultural awareness results in an individual’s growth and societal development.

They will be able to create individuals who are rooted in ‘*Bharatiyata*’ and yet possess global competency. Our nation’s Open and Distance Learning system will not only solve the issues of higher education, but will also be instrumental in achieving targets of Sustainable Development Goals and Government of India’s initiatives like ‘*Beti Bachao, Beti Padhao*’, ‘*Make in India*’, ‘*Digital India*’, ‘*Ek Bharat Shrestha Bharat*’ and more, as initiated by the Hon’ble Prime Minister, Shri Narendra Modi Ji.

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# NATIONAL EDUCATION POLICY–2020 ON HIGHER EDUCATION INTENTION *ViS-Á-ViS* IMPLEMENTATION

S N Hegde

*The feasibility of implementing various schemes/guidelines/ suggestions of NEP–2020 is a Herculean task, given the heterogeneity of our HES (Higher Education System). Of particular importance is the spirit of cooperative federalism, devised to touch the pulse of our people dwelling in 400 cities, 733 districts, 5000 towns and 4,39,000 villages, to understand that education is a powerful tool to change their lives. For a long time, it was felt that the country needs a single national apex body for regulating and coordinating the spectrum of higher and professional education. From this point of view, the decision to have a large setup called HECI is welcome. Since quality research is of regional/national importance, there should be no discrimination between public and private institutions in receiving central grants. While accountability and transparency need to be maintained, HEIs must have absolute liberty to innovate, diversify, standardise and regulate their academic endeavours.*

## PRELUDE

Let us begin with a UNESCO statement (1996) that said: “higher education and research are instrumental in the pursuits, advancement and transfer of knowledge and thus constitute an exceptionally rich social, economic, cultural and scientific assets.” It is this domain that generates stalwarts of businesses, doyens of industries, wizards of finance, academics of distinction, magnets of management, renowned doctors, engineers, scientists and technocrats, legendary statesmen and a galaxy of performers par excellence in different walks of life. Certainly, the higher education system is a reservoir

from which we draw eminent and prominent leaders and nation builders.

In recent times, countries like China, South Korea, Singapore, Thailand, and even Taiwan and Vietnam have convincingly demonstrated that huge investments in quality education in general and higher education in particular, pay rich dividends in transforming human ‘reserve’ into ‘resource’ for triggering economic prosperity and social wellbeing of people. The feasibility of implementing various schemes/guidelines/suggestions of NEP–2020 (herein referred to as The Policy) is a Herculean task, given the heterogeneity of our HES (Higher Education System). Of particular importance is the spirit of cooperative federalism, devised to touch the pulse of our people dwelling in 400 cities, 733 districts, 5000 towns, and 4,39,000 villages, to understand that education is a powerful tool to change their lives. This article analyses certain major policy interventions vis-à-vis their applications.

The Policy on many counts is indeed a fine statement and vision document. It holds promises aplenty and kindles new hopes. It also unleashes significant steps to resurrect, rejuvenate and reinforce our quantitatively large higher education institutions [HEIs] in the next 10-15 years. It intends to usher in structural and functional changes in our HES and suggests many ways and means to effect radical transformation in the foreseeable future. In brief, the Policy is a good roadmap albeit the ‘road ahead is not easy to traverse’.

## SETTING UP HIGHER EDUCATION COMMISSION OF INDIA [HECI]

For a long time, it was felt that the country needs a single national apex body for regulating and coordinating the spectrum of higher and professional education. From this point of view, the decision to have a large set up called HECI is welcome. However, the power and functions of each of the *four* supporting wings National Higher Education Regulatory Council (NHERC), National Accreditation Council (NAC), Higher Education Grants Council (HEGC), General

Education Council (GEC) must be clearly spelled out in a way that there is no scope for collision, confusion and contradiction between them because in the past we had witnessed the lack of coordination between subsidiaries and auxiliaries. Therefore, the decision to decentralise and deregulate higher education should amply reflect in the functioning of the four agencies. In exceptional cases of complex and unresolved issues, the decision of the Governing Council shall have to be final. Secondly, the new paradigm should not suffer from the usual bureaucratic controls/dominance. What we need is a system of “less regulation and more facilitation” of higher education. Overall, the structure and function of HECI should vigorously promote the mandate of enhancing the quality of education in its entirety, especially the research component, which the national and global evaluation of universities heavily depends on.

### **ESTABLISHMENT OF NATIONAL RESEARCH FOUNDATION (NRF)**

Higher learning and research are the twin hallmarks of HEIs, especially the universities. As a nation, we spend a meager 0.7 percent of GDP on R&D. Establishment of the NRF and fulfilling its objective of giving impetus to research is a welcome step. Productive research should not only be conceived and funded well, but also carefully monitored and rigorously evaluated. In the past, both periodic release of grants and evaluation of approved projects have not been satisfactory. The Principal Investigator(s) should have plenty of liberty to operate the grants with complete responsibility of carrying out the work as per the planned schedule. Public money in the guise of research should not be misused. In cases of gross irresponsibility, non-accountability and malfunctioning, there should be adequate disciplinary measures to be taken against the erring investigators. At the same time, due importance must be given to high impact research publications in peer reviewed journals, including out of turn promotion to authors. Suitable rewards and recognition should go to outstanding researchers. Since quality research is of regional/national importance, there should be no discrimination between public and private institutions in receiving central grants.

## SPENDING 6 PERCENT OF GDP

It is indeed heartening to learn that the central government is targeting 6 percent of GDP on education. Way back in 1966, the Kothari Commission had made this recommendation which was subsequently endorsed by a number of committees including the one headed by Prof Yash Pal (2009). Certainly, reaching this target entails a colossal amount of work to be earmarked and achieved. Fulfilling this gigantic responsibility against the economic recession due to COVID-19 pandemic affecting vital activity sectors of the country, is likely to be a Herculean task. Nevertheless, it should be possible for central and state governments (regardless of the political alignment of ruling parties) to mobilise the required resources if there is a firm resolve to zero-in on the priorities as recently expressed by the Prime Minister who said: “We need a transition in education from low priority to high priority.” For example, a serious look or relook on a host of government departments/projects/boards/populist schemes would open the gate to diverse funds for the much-needed educational reforms and rejuvenation. We need a new pathway for equitable distribution of funds like the one conceived under RISE – Revitalizing Infrastructure and Systems in Education and RUSA – Rashtriya Uchcharitar Shiksha Abhiyan.

Although money alone cannot transform our HEIs, though it is very much needed for improvement of infrastructure and to attain and retain quality and excellence. In Karnataka, there are dozens of boards and corporations formed out of political compulsions rather than the actual needs. This author had previously suggested as part of the Task Force on Higher Education (2004), the constitution of a Karnataka Higher Education Development Board on PPP model. A case for this setup was also made later in a Bengaluru-based English daily (2018). However, nobody took serious note of this proposal. While fixing priorities on public spending, education and healthcare should feature close to defence. In addition to planned grants, non-planned support through special purpose vehicles such as HEFA (Higher Education Finance Agency) should continue despite the initial setback. An important strategy of central assistance should create a meaningful and healthy balance in distribution of grants

between state and central HEIs. As for the fees, people will certainly meet the high cost (as they do on foreign education) of higher education if they are convinced of 'good returns on investment'.

Political leadership apart, quality education will change the face of the country by changing the pace of its progress and prosperity in about 15 years down the line, as envisioned by the Policy. A word of wisdom is that we cannot offer 'poor education to poor people in a poor set up' because, the compounding effect of such irresponsible action will lead to intellectual bankruptcy. Hence, money should not be a deterrent to elevate our HEIs.

## INSTITUTIONAL REIMAGINING AND RESTRUCTURING

The Policy envisages a new HES of quality universities and colleges to generate good, creative and well-rounded graduates. It intends to overhaul the current status by:

- a) setting up large multidisciplinary HEIs (with several thousand students on the campus) with autonomy for faculty;
- b) revamping the teaching-learning-evaluation system;
- c) facilitating institutional development based on performance in teaching, research, and service to society;
- d) National Research Foundation (NRF) to foster a research culture in the country;
- e) reforming governance and leadership;
- f) placing a new regulatory mechanism; and
- g) increasing access, equity, and extension of higher education to the disadvantaged and less-privileged groups.

The Policy contemplates ushering in the desired change through a set of reformative and rejuvenative actions. It reiterates the fact that universities across the world are large multidisciplinary institutions of higher learning and research with holistic approach of fusion

and integration of divergent disciplines – a scenario that appears to have existed in our ancient Takshashila and Nalanda Universities. The committee that framed the Policy deserves appreciation for the commendable ‘out of the box’ and bold thinking on several aspects of improving higher education albeit solutions cannot be found through a magic wand.

## INTRODUCTION OF FOUR-YEAR DEGREE COURSE

The present three-year Bachelor’s programme needs major surgery as it is resulting in nearly 80 percent of unemployable graduates. Earlier, an attempt by the Vice Chancellor, University of Delhi to have four-year bachelor’s degree program was unfortunately scuttled by many external forces. Hence, the proposal to introduce a parallel four-year (not as substitute to three-year study) course with research component in the fourth year, looks promising. The Policy, however, is silent on the nomenclature of this new version having provision for multiple exit and entry. The suggestion is to suffix it with ‘honours’. Several decades ago, this practice was in vogue to distinguish a general degree course running alongside an advanced study. Let us take the example of a dual course in Music at an American University: its B Music (general) is meant for those who want to work as music teachers in schools whereas B Music (special) is offered to those who want to become researchers, professors and directors of theaters and music departments of universities. The message is clear. Whenever we introduce such dual programs, we should clearly define the inputs as well the expected outputs. Of course, the Policy also recommends a five-year integrated course leading to a master’s degree which is already in existence in many universities. The idea of multiple exits will work only if the curriculum of the first/second year of the programme is made as a package with well-defined work capabilities. The argument is that when students with a three-year degree/diploma find it difficult to be employed, what would be the status of those ‘half-boiled’ counterparts? Much depends on how one structures the three-year study in terms of capacity building for suitable employment. Further, it is also envisaged that there could

be three types of HEIs, namely Research-focused, teaching-intensive and plus large multidisciplinary and autonomous degree-awarding colleges. The classification based on sound parameters is likely to be a tough job, though the idea of restoring ‘true university character’ with thrust on multidisciplinary teaching and research linked with community engagement is really rosy and exciting. But the fact of the matter is that currently many of our nearly 1000 universities and 45,000 colleges are bereft of competent faculty, learning-living facilities and importantly state-of-the-art infrastructure. The intention is lofty but implementation even 15 years down the line is difficult, if not impossible. In our parlance, many things are easier said than done.

## AUTONOMY

One of the striking features of universities in democratic countries of the world is their autonomy for self-reliance and self-governance. As institutions at the top of the educational pyramid and with qualified and competent faculty, they are expected to function in accordance with their Act, Statutes, Ordinances, Regulations, Rules, Conventions, and Traditions. The scale of autonomy as suggested in the Policy could be linked initially with the level of accreditation. In the past, too many regulations from multiple agencies of the central and state governments have, in effect, strangled even some of our best HEIs. Therefore, it is imminent that we allow institutions to grow as per their own blueprint and roadmap. State or the Central Government cannot and must not try to own universities merely because the latter are funded by the former. While accountability and transparency need to be maintained, HEIs must have absolute liberty to innovate, diversify, standardise and regulate their academic endeavours. Institutions and individuals must grow in a system of freedom and not that of controls. The faculty should have the freedom to decide their teaching schedule and research strategies in the best interest of students, the university, the state, and the country. Hence, the suggestion of the Policy to liberate the HEIs from multiple clutches of dos and don'ts is really radical if this could be translated. Let our HEIs decide their own growth trajectory and



be either institution of excellence or those of mediocrity. External agencies can be motivators and promoters but not the ultimate deciders of the destiny of an institution. Some of our progressive HEIs can emulate the healthy practices operative in our prestigious Indian Institutes of Management, Indian Institutes of Technology, Indian Institute of Science, and others.

### **DISCONTINUATION OF AFFILIATION SYSTEM AND M PHIL PROGRAMME**

The archaic system of affiliation introduced by the British in the second half of 19th century should have been dispensed with long ago. The Policy has addressed this issue well in that, all existing affiliated colleges should upgrade themselves as large autonomous colleges, possibly with degree-awarding privilege within the next 15 years or be prepared to get closed down. In the present scenario of overriding importance to quality and skills, there shall be no provision to allow mediocre institutions to function under whatever pretext. Quality – its attainment and retainment – is not just a verbal jargon. Our HES must demonstrate that it patronises merit of students as well as of faculty and is ruthless in dealing with deadwoods and mediocrity. Whereas good education can uplift the future of our students, a bad one can destroy it. No country, however poor economically, should impart poor education to poor people in a poor set up.

It is truly heartening to note that the Policy is for discontinuation of M Phil program and also for abandoning mono-faculty deemed-to-be universities. M Phil is a poor research degree and has not empowered candidates either for better teaching or research. To be a university, as rightly noted in the Policy, an institution should have multi-faculty character. Universities are different from specialised research centers and regional institutions. Mono-faculty universities which of late, have mushroomed, especially in the private sector, do not simply have the character of a university and hence deserve to be faded out.

## ENCOURAGEMENT TO PRIVATE PARTICIPATION

Today, our people desire quality higher education, and who provides it, is a secondary question. Of course, the state has the primary responsibility to provide good education to the citizens. But, in a vast country like ours, the public sector has certain limitations in terms of financial and other resources. Therefore, encouragement to the private sector with rich financial strength to participate is a wise decision. People who come forward to establish high quality HEIs should abide by the cardinal principle that such a venture is free from commercialisation. It is true that globally recognised American universities like Harvard and Stanford are private initiatives. Money collected should necessarily be used for advancing academic infrastructure and cocurricular facilities. On its part, the government should be a facilitator and promoter of a healthy environment between the two categories. There shall be no differential yardstick for evaluating quality. No discrimination should be made in the application of regulations. Private institutions must be placed at par with government institutions and on equal footing. Let our people have the liberty to study wherever they want to. It is relevant to mention that private participation, especially that of the Missionaries, has been rendering yeoman service to education for centuries in our country. We now need to adopt new approaches to forge partnerships through Public-Private Partnership model. Such a model is working well in sectors like, transport, defence, healthcare and others. Somehow, this aspect has slipped the attention of policymakers.

## GREATER INTERNATIONALISATION WITH CREDIT TRANSFER FACILITY

This indeed is a progressive initiative. A university stands for flexibility and diversity of higher learning and research. It is for fostering scholarship and nurturing creativity. Students should have the liberty to choose courses of their interest and pursue them in institutions of their preference. Student mobilities with smooth transfer of their credits from one institution to another will certainly open new vistas in internationalisation of higher education.

Presence of students with a divergent cultural background in a classroom brings cross-cultural experience and makes learning a great pleasure. It is time that our universities metamorphose as true global centers of knowledge creation and dissemination from their current status as regional institutions of ritualistic teaching-learning-evaluation and degree distribution. In fact, the true character of a university lies in the internationalisation of its programmes and the participation of overseas faculty and students. This very feature secures considerable weightage in global evaluation of universities. Support to entry of foreign universities will open a platform for best practices and healthy competition. However, it is essential to ensure that their functional autonomy is free from several riders and restrictions, including the issue of profit and surplus. Secondly, the credits to be transferred should have comparable academic weights in terms of inputs.

### **IMPORTANCE OF GOVERNANCE AND LEADERSHIP**

Many of our HEIs – both in the public and private sector – suffer from a lack of academic vibrance because of poor and inefficient leadership and highly incompetent governance. Selection of a Vice Chancellor or a Principal must be made based not only on eligibility but also on parameters of suitability. Likewise, competence has to be judged alongside qualifications. For instance, seniority in terms of length of service/experience as followed now, cannot be the sole criterion for appointment as a Principal. Similarly, determining leadership qualities and norms (written or unwritten) for managerial capabilities is a must in the appointment of a Vice Chancellor. An altogether new approach is needed while prescribing selection criteria and procedures for appointment of Vice Chancellors. One should bear in mind that mere academic brilliance and credentials as reflected in one's Curriculum Vitae is by no means a guarantee of leadership and sound capacity to govern. According to an old adage, a leader 'funds the way, goes the way and shows the way'. Likewise, good governance calls for teamwork with responsive, responsible and accountable decision-making abilities. The selection committee must

interact with the shortlisted candidates to have a glimpse of their vision and mission. In the past, we have erred in mixing up eligibility with suitability or desirability.

The Board of Governors should consist of distinguished people in the field of higher and professional education, finance, management, and resource mobilisation. Some years ago, Yale University (US) signed an MoU with Indian Institutes of Technology, Kanpur and Indian Institutes of Management, Kozhikode to expose senior faculty for an intensive leadership programme. Recently, the MoE had initiated similar orientation course to keep in place a ‘second line leadership’ to be used to fill the vacancies of Vice Chancellor, Director, Dean, Registrar and other senior positions.

Academic destination and leadership qualities are different attributes. In these days of widespread malpractices, frauds, student agitations and public protest, we need, apart from scholars, managers of crisis to act timely and firmly. A conscientious Board of Governors should facilitate this process lest the peace in our campuses may go beyond controls.

### **NATIONAL TESTING AGENCY TO CONDUCT A SINGLE TEST FOR UNIVERSITY ADMISSION**

This is certainly a good recommendation. Until the introduction of NEET/JEE for admission to medical, dental, and engineering courses, the students were compelled to appear for a series national/state level examinations. Multiple examinations certainly cause a lot of stress and tension not only on students but also on parents – for arranging travel, accommodation, security, etc. But care must be taken to ensure that (National Testing Agency) NTA is foolproof, and fully geared to maintain the time schedule for large scale examinations, evaluation, and announcement of results on time. Its staff should have the integrity to maintain safety and confidentiality at all levels and for all times. Otherwise, the sanctity of the system will be eroded. This responsibility is onerous but not impossible to execute. Much depends on the technological framework and network of NTA to

be tech-savvy, unlike some of the other government departmental workforce.

## NEW APPROACH TO TEACHER EDUCATION

The idea of discontinuing BEd colleges from 2030 as separate entities and bringing the four-year teacher education programmes under the fold of large multidisciplinary autonomous colleges was well-conceived. Apart from being an integrated programme as envisaged in the Policy, the new approach should empower future teachers with much needed technological knowhow and novel pedagogies. It is true that our school education has suffered, apart from other things, because of poor and incompetent teachers. Reversing the malaise especially, that prevailing in government schools where the majority of our children study, is difficult but achievable if there is an indomitable will to meet the national goals. Bad school education should not be allowed to wipe off the aspiration of our youth in the early stage of life.

The new regulatory system should have sharp teeth to bite and close down low-grade BEd programs as revealed by Accreditation and Ranking Agencies. Like the multidisciplinary approach, upholding quality at all levels of learning is of paramount importance.

## VOCATIONAL, ONLINE AND OPEN AND DISTANCE LEARNING (ODL)

Unlike the '*gurukula system*' of learning, in the modern era, there are several routes. Opportunities beyond formal education will certainly enable millions of our students to opt for non-formal streams. However, institutions offering these courses leading to diplomas and degrees ought to have accreditation to maintain quality at par with their conventional counterparts. All these programmes must be well-designed, monitored, and evaluated periodically by an empowered regulatory authority. In the 21st century, it must be emphasised that knowledge and degrees cannot be decorative and ornamental. This issue should not only be limited to increase the GER; it should instead

aim at producing a set of knowledgeable and skilled workforce. The general apprehension that diplomas and degrees obtained through these channels are inferior to those awarded by formal HEIs should be dismantled. Competence for good performance is the best parameter to judge, be it open and informal system or regular and formal paradigm. Online education needs considerable reinforcement and those who want to participate, must know how to deliver it.

## CONCLUSION

NEP-2020 is a fine policy statement and well-conceived developmental document. It desires to usher in radical but progressive changes at all levels and in all areas of our vast education system. The Policy solicits committed participation of the central and state governments (in addition to that of private sectors) in visualizing the transformation in terms of quality, relevance, equity and accessibility of education to the people at large. By all accounts, the intentions underlying the Policy are lofty and ideal provided those who are responsible to implement them demonstrate the spirit of co-operative federalism by mobilizing the required resources *a priori* to realize the objectives in a time-bound manner. As is known, planning and execution should find synchrony to yield expected results. Certainly, the Policy unfolds a good roadmap of future higher education streams of our country albeit the road ahead poses several challenges to surmount.



# IMPLEMENTING NATIONAL EDUCATION POLICY –2020 COMING TO TERMS WITH DREAMS, PASSIONS AND REALITY

**Sandeep Sancheti**

*Education cannot be anachronistic but relevant to the times, which is why very often we talk and chalk out a National Education Policy that is reflective of the current challenges and emerging opportunities. From being seen one time as the global source of knowledge and learning, India has fallen off the radar and it is time to put it back on the screen and within the top few globally. In order to achieve the goals, education cannot be seen in a piece-meal fashion; only holistically.*

## PRELUDE

A few would have imagined that 2020 would turn out the way it did. The coronavirus pandemic not only brought about memories of the “Great Depression” in the west but also struck a reign of terror worldwide, including in the realm of medicine, disease, and much beyond. Not a single aspect of life including education has been spared. Even after one full year, there is still no end in sight to the dreadful virus; if anything, it is coming up with a deadlier streak in parts of the world. But in the midst of a debilitating year for India, the silver lining is the National Education Policy–2020 (NEP–2020), a document that seeks to put in place a framework of action that has long been overdue, at least for more than three decades. And, coming in the midst of the pandemic, the NEP–2020 drives home an important message: education, even in the worst of times, cannot lag or be held hostage to events beyond one’s control.

‘Rome was not built in a day’, is the adage. Likewise, education or fine tuning different aspects of education cannot be realised in a day or phase. In a developing country like India, the concept of



education has had its various twists and turns over the last seven decades-plus. Still, we are at a point in time where a vast majority of our youngsters have not seen the portals of schools or colleges even as our nation's visionaries were continuously looking at ways in which the country should evolve educationally in the short and longer-term points of view. And with this comes the bottom line: Education cannot be anachronistic but relevant to the times, which is why very often we talk and chalk out a National Education Policy that is reflective of the current challenges and emerging opportunities.

### WHAT THE NEP–2020 ENVISAGES

The NEP–2020, according to a predominant perception, is an attempt to chalk out an education scenario in the country that has the right mix of quality institutions with a focus on research and innovation that fills the ever-challenging needs of the market forces by way of providing what is needed for a changing world. Somehow, from being seen one time as the global source of knowledge and learning, India has fallen off the radar and it is time to put it back on the screen and within the top few globally. In order to achieve the goals, education cannot be seen in a piece-meal fashion. In a political system where the states zealously guard their turfs in law making, the NEP–2020 drives home the point that in the realm of education there is nothing like state or federal rights but only national interests. In other words, the new NEP–2020 is seen as being inclusive, participatory, and holistic.

The rationale for the latest NEP–2020 or the key drivers of change is manifold. The higher education system in India is highly fragmented with a rigid separation of disciplines and with limited access. The question of autonomy is highly limited to students, teachers, and institutions. There has been a lot of talk on research and publications but little action on the ground. Questions abound on institutional leadership and governance; the issue of a regulatory system where much is to be desired with some of the agencies seen to be working in cross purposes or with overlapping jurisdictions; and then the subject of universities going around proliferating affiliation of colleges,

including the so-called autonomous ones, bringing into the serious question the enhancement of quality of education.

On the face of it, the NEP–2020 has the potential to transform the educational sector, seeking to put in place a worldclass education in the pursuit of excellence. The consensus is that the document as put forth and passed is well drafted, researched, and consultative with more than two lakh inputs or comments taken into account. It paves the way for a system that seamlessly weaves in a child from kindergarten to postgraduation. The Policy raises many larger questions such as the need for an affiliation system that ropes in at times some 10,000 institutions in one umbrella awarding degrees. The NEP–2020 also seeks to revamp the existing regulatory framework ensuring that elements of access, equity, quality, accountability and transparency are continuously and adequately addressed. The new proposed framework also has the required accent and potential to drive aspects of speed, efficiency, and academic diversity in the higher education space.

### **THE NEP–2020: DREAMS VS REALITY**

The NEP–2020 and the policies that evolve around it may on the surface look like a big dream but the basic question is: Why should we not dream big? The NEP–2020 is not just about numbers or how much the country should crowd the portals of higher education. Of course, nothing is perfect, can or would be perfect. But this does not seem to be the time to find fault or deficiencies in a new system that has not even been tried out. Rather the NEP–2020 should be seen as a challenge to leaders and administrators of education keeping in mind the simple and yet critical assumption: the NEP–2020 as envisioned is student-centric and with a simple realisation that changes happening in the international system are so rapid that education cannot be anchored in the past but pushed towards the future with an eye on the principal stakeholder—the student.

There is the belated acknowledgement that today’s education cannot be confined to academics alone; rather it should have a fusion of industry, government and society along with and education that gets

beyond classrooms to include laboratory sessions and perhaps on the job training. At the same time, it is important to keep in mind that the deliverables and choices are essentially left to the student to be able to maneuver as institutions are finding it difficult to deliver the desired goods in any one fixed scheme. In the realm of academics the NEP–2020 – or Education 4.0 – offers a variety of not only three and four year degree programmes, but a choice of modes of education through offline, online or mixed, a multidisciplinary approach that would enable a student to cut across disciplines and specialisations. The use of vocational courses and credits for award of general degrees and the promotion of internationalisation are also collectively an objective. If there is one major take away from the NEP, it is flexibility.

Quite naturally, the NEP–2020 as envisioned has identified a number of priorities not just in the realm of academics that would include research but also in the fashion as to how regulatory bodies would have to function in order to give a new and more meaningful thrust to achieving the objectives. There has been late realisation that the earlier regulatory bodies lacked the synergy and hence the commitment to deliver the goods; and also that manageability of a crucial sector like education does not come about by increasing regulatory mechanisms with overlapping jurisdictions that naturally downgrades the functioning of boards. Also, the NEP–2020 realises the need to take a close look at the affiliation system, and removing it as a result of the demerits involved. But the dismantling of the system cannot be done overnight, rather it would be taken in a graduated fashion over a period of around 15 years.

The NEP–2020 offers many things in a changing landscape and some of it specifically addresses the problems faced by education such as affiliation. For instance, student-centric NEP–2020 shows the way, for instance through the Academic Bank of Credit (ABC) of moving away from a homogeneous style of learning to a more heterogeneous system in which a student can chase not only her/his dream but also her/his passion. The entry-exit points are clearly defined along with whether a student can graduate with a degree, diploma or postgraduate diploma, all of their own choices. Students are given the option of

shopping around for credits in different institutions, putting them all together with the option of selecting an institution from which to graduate. The NEP–2020 understands and accepts that a ‘one size fits all’ strategy for education is not the way to go about; instead, the boundaries would have to be flexible.

For instance, a student who has dreamt of being an instrumentation engineer and has a passion for music would not have to sacrifice one for the other. The facilities to tailor a degree or constituents of it must be in the hands of students, not regulators. Likewise, the ABC would also have to give the option of multiple points of entry and exits along with the flexibility of credits. A student entering a three or four-year college/university program would have the freedom and luxury to complete her/his studies in a fast or slow mode without any stigma and equivalence challenges attached to it.

The student-centric ABC would be ideal for many who currently have the inability to juggle between courses and credits along with a desire to dabble with different institutions. The suggestions that is being talked about is that with the ABC an academic program, one could be more flexible; credits could be taken in different institutions; credits can be multidisciplinary; and credits can be in India or from foreign institutions; but at the end of it all a student can have a regular Degree or a Bachelor’s in Liberal Education that would entail the desires of a fulsome student. The ABC within the confines of the New Education Policy is not just about a routine degree in a prescribed time frame and in a rigid academic format but about a young mind being able to flag down her/his dreams with a passion and in whatever design desired by them.

It is laudable that the NEP–2020 looks at increasing the Gross Enrolment Ratio (GER) from the current 26.3 percent to 50 percent by the middle of the next decade; in sheer numbers, some 3.5 crore students are expected to be added to higher education. But even here educationists and administrators would have to analyse the challenges that have come about as a result of the COVID-19. Education itself is a burning issue that has been crying out for reforms and has taken a backseat again due to the COVID-19; but the bigger challenge is in scheduling classes that have been physically shut off for the last

more than a year or so or in providing technology to a student in the online mode that is affordable or cost effective. The problem is not just with providing laptops to students who do not have them or cannot afford them, but also in ensuring that they have enough money for data charges for the entire day of classes. It is evident that education cannot be divorced from technology for the latter has changed all frontiers of the world. Information Technology is bringing about unprecedented changes in higher education during this pandemic and one that has to be carefully factored into the system and sustained on a long-term basis.

There is no doubt that the general transformation in education as put through in the NEP–2020 is driven by new technologies where future education, including examinations, would need to be handheld by changes in technology through smart classrooms, biometric eye tracking, 3-D printing, cloud technologies, collective learning through social networking, holograms, augmented and virtual reality, artificial intelligence, game-based learning and LCD Desks, to mention a few. But for the student NEP–2020 presents a profound transformation in framing a degree that will have flexibility and quality as central planks when choosing faculty, courses, timings, mode and even taking examinations ‘on demand’. The versatility of this higher education would hence move away from a single-track silos approach to a more broad-based system that would make education a desire for lifelong learning. The same goes for examinations where many of the technologies listed can be used more flexibly, away from the rigidities of the past, to create a system that enables students to go for open examinations that too in a time frame which is comfortable to them.

On the financial front, one of the pillars of the NEP–2020 is to set apart 6 percent of the Gross Domestic Product for education, which for a country like India is impressive indeed. Currently, the annual spending on education is less than 3 percent of the GDP. But overall outlays of spending on education should be without any caveats, such as earmarking much of these funds only to central institutions. The Union Ministry should take care of self financing institutions as many of them do not have deep pockets as imagined in some

quarters. Private educational institutions do indeed set apart a chunk of their earnings to constantly upgrade their infrastructural facilities that would include hiring of top notch teachers and adding on to high-tech labs together with providing research scholars with additional facilities. Unlike in the west where private institutions have the facility to fall back on earnings of billions of dollars of endowment funds, private entities in India do not have such luxury. Further, even within the realm of setting apart funding annually, the central government must allocate a large chunk of the money for research.

In the context of finances, policy makers should also come to terms with the structure of the education system in India that follows an inverted model where the fee structure for quality high schools is very high compared to that of quality universities which is reasonable or low. In the teaching learning process should a financial shortfall occur, private institutions must be permitted to raise their fee structure appropriately. In fact, in the new autonomous environment today, Indian Institutes of Technology and Indian Institutes of Management have been allowed this facility; the same must be granted to self financing colleges who constantly face the resource crunch.

Education indeed has come a very long way, and this is the time to look forward to ensuring that the children of India have a future that goes beyond our shores as well. It is one thing for a young mind to learn from the past, but a totally different one to be pegged or anchored on to an old-fashioned way of thinking that will see the world pass by. In the last seventy years or so, India has had the misfortune of seeing thousands of its young minds leaving the country for a better place to study. This brain drain, contrary to the political rhetoric that is being spewed occasionally, has not been reversed. The flow of Indian youth to the West may have slowed especially to the United States, not because of diminishing standards in that country but for many different reasons like other institutions in the Asia Pacific offering alternatives, established Western institutions setting up campuses in our neighborhood and fluctuations in foreign exchange, to mention just a few.

But, thanks to the NEP, the internationalisation of education is

slowly going to catch up in India and in different ways. The pockets of excellence by way of teaching and research, extension publications and patents is gradually picking up in Indian campuses. The NEP–2020 is permitting, in the name of globalisation, the setting up of foreign universities paving the way for domestic institutions to compete with foreign universities for rankings and ratings. Knowledge and learning has come to be no longer an exclusive preserve of the West with South Korea, Taiwan, China, and Israel emerging as hot spots with institutions of excellence; India is also making headway overseas with possibilities of joint doctoral programs.

Internationalising education has come to mean different things to different institutions over and beyond just keeping the focus on foreign degrees. An institution like SRMIST which is multidisciplinary in nature has more than 160 MoUs with foreign universities and throws open its education to students and faculty by way of the semesters abroad and faculty exchange programmes while keeping itself open to receiving foreign students for a range of programmes like the post-doctoral fellow to short-term programs as well. Integrated and twinning programmes are also on the unveil, keeping the doors open for free credit transfers. And slowly but steadily Indian institutions are being invited to set up campuses abroad even if for the time being, prime specialisation areas are Medicine and Engineering. For now, India's interest is in the immediate neighborhood of South Asia and the Middle East, while keeping our eyes open for distance/online/virtual modes especially for the African continent.

## CONCLUSION

The regulatory framework for foreign campuses in India may have to be better fine-tuned and the NEP–2020 will have to evolve itself to see how the new models are going to be developed that are going to be for mutual benefit, keeping in mind the need to maintain the social fabric of our country. For the present, a lot of uncertainty exists by way of the pandemic where academics both in India and overseas face challenging times, especially on the monetary front. If the

West is seeing colleges and smaller universities shuttering because of lack of foreign students in some states, in India, institutions face the financial crunch of students being unable to pay fees because of economic compulsions.

There is one thing about life that also holds good for education: the inevitability of change as nothing is permanent. Knowledge does not have a shelf life, but at the same time knowledge has to adapt with the changing times. It is often said that broader objectives are achieved only when goal posts are present, seen or understood; at the same time, goals are difficult to achieve when the goal posts of knowledge keep changing. There is nothing wrong in dreaming; great nations come into place only because there were “Big Dreamers”, but in this fast changing globalised world, passionate dreamers are becoming difficult to identify. Hopefully, the NEP-2020 will set in motion a pattern of ideas and thinking that is qualitatively different from that of the yester years.

Just as how nothing is permanent in life; nothing is perfect either. Seen in this perspective, the third Education Policy of Independent India that has been crafted by the present government is something that has to evolve and take shape keeping in mind that it is a serious attempt to develop the thinking of a young mind from a toddler to that of a grown-up young adult. In between all the differences that individuals and the governance might have, hopefully, the focus will be on bettering the education of the country to make it on par with the top two or three in the world, making it more relevant and impactful.





# NATIONAL EDUCATION POLICY–2020 A HOLISTIC ROADMAP FOR TRANSFORMING HIGHER EDUCATION IN INDIA

P B Sharma | Sanjna Vij

*It is a well-recognised fact that education plays an important role in shaping a person into a responsible, capable and caring individual empowered with the capabilities, competence, and caliber to create a better world than that of the previous generations. It is seen as a major vehicle for nation's development on pathways of progress and prosperity and an instrument for holistic transformation for the society and the lives of the people at large. The National Education Policy–2020 aims at revitalising and even radically reforming India's education system by rendering it equitable, holistic, multidisciplinary and a vibrant system that shall contribute to realisation of Vision India of the 21st Century. The present paper highlights the key areas of NEP–2020 that are targeted to transforming higher education as a powerful instrument of all round national development as also to make a profound contribution to the advancement of the global community, now that the power of knowledge and innovation has emerged as the most propulsive thrust for leapfrogging socio-economic advancement of human society.*

## PRELUDE

Change is always hard to adopt, but it is always good, especially when we embark upon making rapid progress on socio-economic aspects of a society. India, with its demographic dividend of 666 million young people below the age of 25 comprising of 48 percent of its population, has a golden opportunity to leapfrog on its advancement now that the 21st century has been recognised as the peoples' century.

With PCM becoming Peoples' Capability and Maturity, the role of education has to be rediscovered from the point of view of creating a capable and competent workforce that has 21st century skills that include the character skills of integrity, work ethics, and professional morals practiced in an environment of transparency and trust as the digital age has truly arrived.

The National Education Policy–2020 has arrived at a highly opportune time when on one hand the nation is coming out of the COVID-19 pandemic more successfully than many other advanced nations of the world and on the other, the resolve and commitment to create a New India of our dream has become a national mission being pursued with passion by the Government of India.

The NEP–2020 is the need of the hour to carry out a thorough rejuvenation and even radically reform India's education system from schools to college and the university levels. The major thrust of the new education policy is on reforming education system by making it more inclusive, holistic, and multidisciplinary to align to the clarion calls of the new knowledge age driven by the creative and innovative genius of humans.

The education sector demands a futuristic strategy of outstanding consistency, from “early childhood care education to higher education”. Education is central to the achievement of maximum human capacity, the creation of an equal and just community, and the advancement of national development goals according to the NEP–2020. The secret to India's continued rise and global success in terms of “economic development, social justice, and equity, technological progress, national integration, and cultural sustainability” is the provision of equitable access to quality education. The fundamental goal of NEP–2020 is to make the education system more efficient through:

- Holistic learning;
- Flexibility;
- Multidisciplinary education;
- Effective regulatory mechanism;

- Assuring high employability;
- Strengthening ecosystem for research and innovation;
- Giving impetus to entrepreneurship and startups; and
- Nurturing ethics, human values and professional morals.

In announcing NEP–2020, the Union Minister of Human Resource Development clearly specified that the NEP–2020 aims at making “India a Global Knowledge Superpower”. The NEP is targeted to facilitating holistic development of students, creating enterprising minds in plenty, achieving the much-desired integration of knowledge and skills, and at the same time accelerating research and innovations in university campuses assuring quality and relevance of research for the much desired vibrancy of industry and society integration through the education ecosystem.

The policy thrust areas take cognisance of the fact that education is not just about learning to know, but also about learning to do and learning to live together in harmony with nature and in a diverse society. As such the nurturing of human values and character skills of truthfulness, transparency, compassion, peace, and non-violence have been given their due importance in the overall education framework in the NEP–2020.

## THE EVOLUTION OF NEP–2020

The need for education policy was felt soon after independence. The first University Education Commission was established in 1948 that was followed by Secondary Education Commission in 1952. However, a comprehensive view of educational reforms was given by Dr DS Kothari who suggested that a National Policy on Education be formulated by the Government of India, which should serve as a guideline for the state and local bodies in the design and implementation of their educational plans. The path to quality, excellence and equity however, later became the thrust of the National Education Policy of 1986 which also advocated for the massification of higher education. The policy was further modified in 1992 to provide a major thrust to vocational education.

The National Knowledge Commission of 2006 placed its major thrust on autonomy, abolishment of affiliation system that created large affiliating universities in India and also advocated for a National Higher Education Network connecting major universities of India to share both resources and best practices. The evolution of New Education Policy is to advance this cause of autonomy so vital for fostering an environment for excellence as also to focus on vocationalisation and to provide a major thrust to R&D and Innovation Ecosystem in universities alongside a focus on India's pride in its rich spiritual heritage and indigenous knowledge systems. Table 1, below provides the evolution of Education Policy in India.

**Table 1: The Evolution of NEP–2020**

University Education Commission (1948-49)
Secondary Education Commission (1952-53)
Education Commission (1964-66) under Dr. D.S. Kothari
National Policy on Education, 1968
42nd Constitutional Amendment, 1976-Education in Concurrent List
National Policy on Education (NPE), 1986
NPE 1986 Modified in 1992 (Program of Action, 1992)
National Knowledge Commission Report 2006 & 2007
T.S.R. Subramaniam Committee Report, NEP (27th May, 2016)
Dr. K. Kasturirangan Committee Report, NEP–2020 (31st May, 2019)

The current Education Policy NEP–2020 was adopted on 29 July 2020, which incorporated several improvements relative to the prevailing education policy which was launched in 1986. Numerous changes have taken place in our country during these long 34 years in all spheres of national life, society, economy and the state of the world at large. The 21st century itself has necessitated a fresh look at the way curriculum is designed and the teaching is imparted in a way that technology has most significantly impacted the teaching-learning environment. The digital transformation has

been accelerated in all spheres of human endeavours—from banking to commerce and business and from healthcare to governance. Naturally, the education system and teaching-learning environment have also come under tremendous pressure of digital transformation with easy access to knowledge from digital resources. COVID–19 further accelerated the use of online teaching learning at all levels and a much greater confidence is now generated in the use of digital systems for education at all levels including higher education. With India’s continuous rise in the Global Innovation Index, the policy thrust on R&D and Innovation Ecosystem in colleges and universities is given its due importance in the National Education Policy, NEP–2020.

## **KEY GEARS OF NATIONAL EDUCATION POLICY–2020**

The gist of NEP–2020, which is rolled up in sixty-six pages, is meant to transform Indian education system to the next new succeeding level, which would be contemporary, liberal, progressive, and joyful. Some key points of NEP–2020 are:

- The government targeting to make education for all both affordable and easily available, thus bringing more than two crores out of school children back into the mainstream.
- Our present structure of 10 + 2 has been substituted by 5 + 3 + 3 + 4 structure.
- Education will be essential for children between the ages of 3 and 18 so as to have 100 percent children ‘school-ready’ by 2030. The policy pushes for the universalisation of early child care and education, ECCE.
- More emphasis has been given to vocational education that would start from the sixth standard in the schools, including internship for ten days with local crafts.
- From class 6, students can learn coding in school, which is one of the critical, required skills of the 21st century.
- Multiculturalism shall be promoted, and the mother tongue shall be the medium of instruction until the fifth standard.

- NEP–2020 aims to shift the “Ministry of Human Resources Growth (MHRD) to the Ministry of Education (MoE)”, a recommendation that has already been implemented by the Government of India.
- The policy also insists “Multidisciplinary Education and Research Universities” be developed in the country at par with the IITs and IIMs.
- Education for teachers will eventually be shifted to multidisciplinary colleges and universities by 2030.
- Undergraduate degree programs would have a duration of 4 years and several exit opportunities shall be built-in, for example:
  - Certificate after one year of completion;
  - Diploma following completion of two years;
  - After three years of completion of the Bachelor’s degree; and;
  - Priority is granted after four years for a multidisciplinary degree.
- An Academic Bank of Credit (ABC) will also be developed by the government to “digitally store academic credits received from different HEIs so that an HEI degree can be submitted”.
- M.Phil programs will be eliminated so that students could go straight for a doctorate following graduation.
- Top education organisations worldwide would be allowed to come to India and set up their campuses according to the scheme.
- By setting up incubation centers, higher education institutions can concentrate on fostering creativity, innovativeness and accelerate start-ups from the campuses.
- Further, to provide a major flip to knowledge creation and its translation into new and innovated products and services as also to take head on the mega challenges, the National Research Foundation would be set up.

- The policy strongly focusses on Indian values, culture, and philosophy.
- The integration of technology for professional education is the primary attention in NEP–2020.

The Policy also states, “all universities and colleges will strive to become multidisciplinary by 2040 and that the Gross Enrolment Ratio (GER) in higher education grows from 26.3 percent (2018–19) to 50 percent by 2035.” It is worth mentioning that India’s GER in higher education has made an impressive growth from around 8percent in 1992 to 26.3 percent in 2018–19. It may however be important to recognise that the GER in higher education in advanced countries also includes all those who go to community colleges and vocational institutions after schooling. Table 2 below gives Gross Enrolment Ratio in some of the developed nations, for 2017–18.

**Table 2: Comparison of GER (Higher Education) with other Countries**

Country	GER (2017-2018)
Germany	70 percent
France	66 percent
United Kingdom	60 percent
Brazil	51 percent
China	49 percent
Indonesia	36 percent
India	25 percent
South Africa	22 percent
Pakistan	9 percent

Sources: UNESCO, PRS, 2019

The NEP–2020 recommends that the ability of established institutions of higher education should be strengthened to maximise GER. It proposes that all institutions should aim at being big



multidisciplinary institutes (with thousands of registrations) and that by 2030 there should be one such institution in or around each district. Furthermore, to enhance access to higher education, universities could have the choice of running accessible distance learning and online programs, now that the digital age has arrived in education, including higher education.

## RESTRUCTURING OF INSTITUTES OF HIGHER EDUCATION

The NEP–2020 states that the ecosystem of higher education is extremely fragmented in the country: “The current complex nomenclature of Higher Education Institutions (HEIs) in the country, such as “deemed to be university, associated university, affiliated technical university, unitary university, is simply replaced by university”. India has 1050 universities, 39,931 colleges and 10,725 stand-alone schools, according to the 2018-19 All India Report on Higher Education (technical institutes such as polytechnics or teacher training institutes), as given in Table 3.

**Table 3: Number of Universities in India According to Different Categories**

Type of University	Number of Universities
Central University	46
Central Open University	1
Institutes of National Importance	127
State Public University	371
Institution Under State Legislature Act	5
State Open University	14
State Private University	304
State Private University	1
Deemed University – Government	34
Deemed University – Government Aided	10
Deemed University – Private	80
<b>Total</b>	<b>993</b>

Sources: All India Survey on Higher Education, MHRD, PRS, 2018-19

The NEP–2020 proposes that all HEIs be consolidated into three categories:

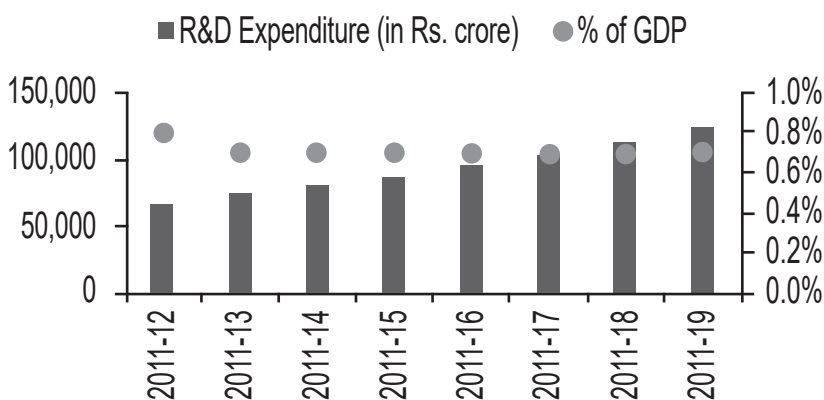
- Academic universities primarily focused on research and education;
- Teaching universities primarily focused on teaching; and
- Professional colleges primarily focused on undergraduate education.

Eventually, all these entities “will move towards full autonomy – academic and administrative – in order to enable the vibrant culture”.

## SETTING UP A NATIONAL RESEARCH FOUNDATION TO BOOST RESEARCH

The NEP–2020 states that India is spending on Science and Innovation at just 0.69 percent of GDP and is lagging behind in this respect as compared to other nations. It is worth taking a note that, as a percentage of GDP, India’s overall R&D spending has stagnated at about 0.7 percent of the GDP. In 2018–19, the overall spending on R&D in India was Rs 1,23,848 crore. The graph below, Graph 1, shows India’s spending on Research and Development (R&D) during the last few years

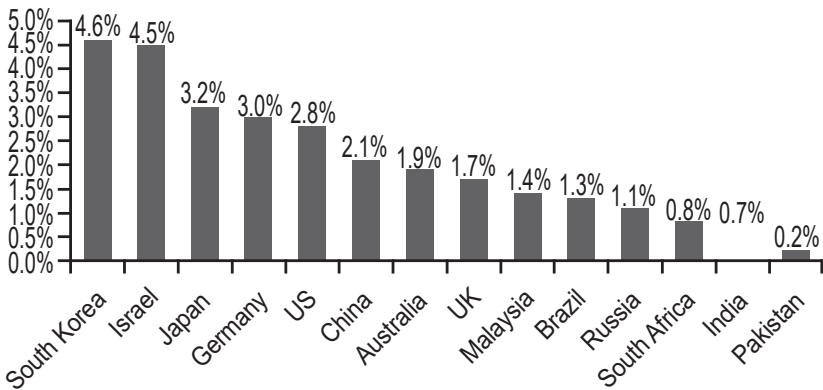
**Graph 1: R&D Expenditure in India (2011–12 to 2018–19)**



Sources: S&T Indicators Table 2019–20, Ministry of Science and Technology, March 2020, PRS

It is important to note that South Korea spends 4.6 percent, Japan spends 3.2 percent, the US spends 2.8 percent, China spends 2.1 percent, and the UK spends 1.7 percent of their GDP on R&D as shown in Graph 2. India’s R&D spending of 0.7 percent of GDP is quite low in comparison to that of the above countries and it may not be out of place to add that India’s contribution to new knowledge and new technologies is directly impacted by R&D spending. The only silverline is that the ingenuity of the Indian mind and its creative and innovative abilities have still found expression in pushing India’s Global Innovation Ranking from 81 in 2014–15 to 42 as of now in 2020. As a policy, we need to strengthen our Innovation Ecosystem to fully utilise the innovative potential of young India, while at the same time increase the R&D funding in areas that matter most for India and its global competitiveness.

**Graph 2: Comparison of R&D Expenditure in India with other Countries (2017)**



Sources: S&T Indicators Table 2019–20, Ministry of Science and Technology, March 2020, PRS

The NEP–2020 has proposed setting up of an autonomous National Research Foundation (NRF) to support and promote quality and relevance of research in India. The policy document clearly states, “If India is to become a leader in these disparate areas, and truly achieve the potential of its vast talent pool to again become a leading knowledge society in the coming years and decades, the nation will require a significant expansion of its research capabilities and output across disciplines.” The NEP–2020 further argues: “Today,

the criticality of research is more than ever before, for the economic, intellectual, societal, environmental, and technological health and progress of a nation.”

The NRF is conceived from the point of view of radical reforms in the way the research is funded and is carried out by the researchers in India. It argues: “The societal challenges that India needs to address today, such as access for all its citizens to clean drinking water and sanitation, quality education and healthcare, improved transportation, air quality, energy, and infrastructure, will require the implementation of approaches and solutions that are not only informed by top-notch science and technology but are also rooted in a deep understanding of the social sciences and humanities and the various socio-cultural and environmental dimensions of the nation. Facing and addressing these challenges will require high-quality interdisciplinary research across fields that must be done in India and cannot simply be imported.”

The message is loud and clear that India’s trust in R&D must align to the national priorities and global aspirations in overlapping areas such as climate change, mopping out enormous environmental pollution, water security, and accelerating growth of green technologies. The success of NRF will depend upon how effectively it is able to collaborate with National Missions and coordinate with bodies like the Indian Council of Agriculture Research and the Indian Council of Medical Research among other councils.

## THE HEADWAY OF NEP–2020

The NEP–2020, as submitted by the Kasturirangan Committee, aims at a long-lasting impact of education on national development with the support of five pillars, the *Panchatatvas*:

- Access
- Equality
- Quality and Relevance
- Affordability

- Accountability

Its successful execution would however, require suitable investments in technology, resources, skills, infrastructure, academic freedom and teachers' training.

The NEP–2020 has recommended to call the top overseas educational organisations/universities to function from India. The success in this regard shall however depend upon whether India could fast create the enabling environment to attract the top world class universities to come and establish their campuses in India and give them the necessary freedom to operate with the focused attention to quality and freedom to excel that they enjoy in their parent country.

Given the flexibility in education, National Education Policy–2020 is suitable for all students who are thoughtful about their professional move.

The National Education Policy–2020 focuses on principles that involve innovation and strategic thought, constitutional standards, appreciation for diversity and the local background, a supportive student and faculty working atmosphere, and meaningful investment in a solid, diverse public education system. It also guarantees 'merit-based appointment of leadership' and 'freedom from political or external interference in higher education organisations'.

## **TOWARDS A HOLISTIC AND MULTIDISCIPLINARY APPROACH**

The policy lays specific importance on the development of creativity and higher order thinking skills in each individual who aspires for education. The 21st century students should be well prepared with multiple skills comprising of critical thinking, compassion, teamwork, flexibility, analytics, and problem solving. Hence, higher education institutions should focus on the outcome based curriculum to develop these skills among students. In NEP–2020, a much greater emphasis is given to holistic and multidisciplinary education as this is a very important component for inculcating the culture of innovation and research, thus the emphasis is on flexible curriculum where students

shall be allowed to take up creative subject combinations like science or technology with liberal arts or social sciences, or music. Liberal arts should be fetched back to our Indian education system “as it is exactly the kind of education that will be required for the 21st century” as the NEP highlights. The NEP–2020 aims at overall growth, which implies that through accessing resources, qualified teachers and other facilities at higher education institutions and newly launched Multidisciplinary Education and Research Universities (MERUs), students will now have the expertise or mastery by cutting across fields and thus possess multidisciplinary skills so vital to excel in the multidisciplinary work environment in the industries and multitasking in the service sector.

### **SHARE FOR THE TEACHERS IN THE POLICY**

The NEP–2020 defines that quality teachers are an essential requirement for the development of the nation. Hence, this Policy focuses on teachers’ learning, providing them with an appropriate atmosphere, encouragements, and incentives. Some of the fundamental changes proposed for the teacher fraternity are:

- Training will be provided to the faculty to improve their grip and knowledge of online platforms, teaching skills, and creating e-content. Therefore, teachers will have to be digitally skilled to blend into digital education developments.
- Teachers must be grounded in Indian values and traditions and new developments in curriculum, pedagogy, and teaching-learning education.
- Unnecessary duties, allocations, or transfers of teachers should be stopped.
- Encourages among faculty the use of e-learning platforms such as SWAYAM, MOOC, etc.
- Innovative openings could be offered to faculty for self-improvement, and self-space like taking up teaching in remote or tribal regions would give them satisfaction and benefits.

- By 2030, a 4-year integrated B.Ed., degree will be compulsory to become a professional teacher. Besides these, two years and a 1-year B.Ed. degree will also be offered to those who have completed a Bachelor's degree and a master's degree, respectively.

## **BLENDED EDUCATION MODEL**

The blended delivery model in education has gained great heights during the COVID-19 pandemic times. The pandemic has opened an enormous opportunities for India to leapfrog with respect of education delivery models to match international standards. The institutions are well advised to keep in view the current scenario and encourage online learning supported by state-of-the-art digital infrastructure while at the same time practicing blended delivery models for a more effective teaching learning environment. Quality blended learning is the combination of learning show with pedagogy practices and technology-aided deliveries. Therefore, integrating blended teaching-learning into existing teaching practices requires proper planning like creating robust digital infrastructure and facilities, resources, and good technical support that even supports remote areas. Faculty members are the key to successful implementation of blended learning. Hence, universities should provide continuous professional development set of skills for faculty to discover and find out the differences between using online technology impactfully in a blended mode compared to just uploading resources online when it comes to engaging students online. Further, NEP–2020 also recommends setting up a National Education Technology Forum, a stage for discussing free and innovative thoughts or ideas on using technology to boost educational planning, teaching-learning, and administration.

## **CONCLUSION**

With a well-articulated policy such as NEP–2020 aligned to national and global aspirations, the universities or colleges are called upon to rejuvenate the academic and research environment, so as to provide a

sustained focus on employability, entrepreneurship and innovations. Creating enterprising minds that are inspired to excel in technology intensive work environment and building 21st century character skills would require radical reforms in the way education is imparted at present. Additionally, the creation of new knowledge and fostering an environment of innovation and startups would further boost the institutional capacity to contribute to National Missions and provide regular supply of new know how for the industry.

Universities and colleges are required to keep their doors unlatched to welcome new ideas and promote collaborative learning and collaborative research. The National Educational Policy NEP–2020 seeks to bring a holistic change to India’s education system and the new education policy can genuinely bring about a radical transformation in India’s education landscape that will take India to unprecedented height in the community of the world’s leading countries in the years to come. The reforms under NEP–2020 with a strong emphasis on equality, relevance, inclusivity, and digital literacy seek to turn India into a knowledge powerhouse. It shall place the Indian education system at par with the segment’s global practices while building a generation that is tech-driven and future ready.

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# TRANSFORMING HIGHER EDUCATION IN INDIA CHALLENGES AND OPPORTUNITIES

Upinder Dhar | Santosh Dhar

*The consistent decline in the enrolments at secondary, senior secondary and higher education levels is a matter of concern. The success of NEP–2020 and the pace of its implementation depends to a large extent on how effectively the government, universities and schools can tide over the practical challenges. The last major revision was made in the education policy in 1986. One of the main thrusts of the national policy in higher education is to end the fragmentation of higher education by transforming higher education institutions into large multidisciplinary universities, colleges, and HEI clusters, each of which will be having students in thousands. Unfortunately, the policy comes into being at a time when economy has been battered by COVID-19 related lockdown, low government tax collections, and high fiscal deficit even pre-COVID-19. It is very challenging to restructure the existing regulatory system driven by multiple authorities and rebuild the unitary regulatory system with four verticals, as a torchbearer for quality higher education.*

## PRELUDE

National Education Policy–2020 is a new policy to address the challenges that have affected the Indian Education System for a number of decades. The focus areas are lack of multidisciplinary approach and flexibility with regards to subject choice, assessment as well as skill gaps. While the drop-out rate has declined for higher education, Gross Enrollment Ratio is just about 26.3 percent compared to 58.2 percent in senior secondary, and 79 percent in secondary levels, meaning that most of the students do not even enroll in higher education. The consistent decline in the enrolments at secondary,

senior secondary, and higher education levels is a matter of concern. The other overall focus areas for NEP–2020 include curriculum design, teacher training, assessment, evaluation, and examination format and teacher appraisal. The success of NEP–2020 and the pace of its implementation depends to a large extent on how effectively the government, universities, and schools can tide over the practical challenges.

## IMPLEMENTATION ISSUES WITH POSSIBLE SOLUTIONS

The last major revision was made in the education policy in 1986. To overcome the deficiencies experienced during the last 35 years, one of the main thrusts of the new policy in higher education is to end the fragmentation of higher education by transforming higher education institutions into large multidisciplinary universities, colleges, and HEI clusters, each of which will be having students in thousands. The structure of 10+2 in school education will be replaced by 5+3+3+4. The total duration before approaching higher education shall remain the same.

Moving to large multidisciplinary universities and HEI clusters is one of the major recommendations of this policy regarding the structure of higher education. The policy seeks to establish multidisciplinary institutions for higher education replacing the single-disciplinary ones. The road to attain this goal has been paved with good intentions.

### Challenge 01

Our country has more than 1,000 universities today, and there are problems associated with large affiliating universities resulting in poor undergraduate education in colleges. Doubling the Gross Enrolment Ratio in higher education by 2035 will mean that we must open one new higher education institution every week for the next 15 years, with at least one in or near every district (*GER in 2018: 26.3 percent and GER 2035: 50 percent*). Opening one

higher education institution every week on an ongoing basis is a massive challenge.

## Challenge 02

From the funding point of view, NEP–2020 envisages an increase in education spending from 3 percent to 6 percent of GDP, which amounts to around INR 2.5 lakh crores per year (*Viswanathan, 2020*). The policy comes into being at a time when economy has been battered by COVID-19 related lockdown, low government tax collections, and high fiscal deficit even pre-COVID-19. Economists have been advising to go for large stimulus packages amounting to double-digit percentages of GDP, despite the strain on the exchequer. National Education Policy is a 20-year journey, but one worries that we may be off to a stumbling start over the next 2-3 years, when government and budgetary priorities are focused on healthcare and economic recovery.

It will be a great achievement to fully implement the recommendations of NEP–2020 for higher education given the limited resources at hand. It requires private institutions to offer more scholarships to make admissions possible for the students from low-income strata as well, but NEP is silent on how this can be achieved. This indicates a need for greater public funding in higher education, which in reality does not go in line with the current scenario. The centre and states shall have to work together to increase public investment in education.

## Challenge 03

In higher education, inter-disciplinary learning is a welcome step. The new policy promotes flexibility so that learners could choose their learning paths: arts, sciences, physical education and other extra-curricular activities need to be equally promoted so that learners could pick up the areas of their interest. But, at the same time, the universities in our country have for decades been highly departmentalised. People in the academia have preferred rigid territories over flexibility. Thus,

changing the mindset of faculty, particularly that of the seniors, is a big challenge. It requires a cultural shift in the entire higher education ecosystem over the next 15–20 years.

### **Challenge 04**

We have more than 14 lakh faculty members in higher education. It is a challenge to train such a huge number in new-age skills in a short span of time. The existing education system excludes formal training and orientation towards pedagogy for college and university educators. This urgently calls for an overhaul of the curriculum design to make it flexible and organic for enabling foundational and higher order thinking and inculcation of skills at different levels of education.

Mentoring the young faculty is highly desirable, but it is equally challenging to identify the suitable mentors from the lot of senior and retired professors. Faculty needs to be trusted and empowered to conduct innovative teaching and research, and also extend their service to the community. There is an academy at Mussoorie for grooming the young probationers of civil service in the country, but no such facility is there at present for the young men and women who choose higher education as their career. At least one such academy of global standard needs to be established to prepare and orient the young faculty for this profession.

### **Challenge 05**

NEP–2020 classifies all HEIs into 3 categories: Research-intensive Universities, Teaching Universities and Autonomous degree-granting colleges (National Education Policy, 2020). The country has more than 40,000 colleges, a large proportion of which offer only a single program and have fewer than 100 students. The challenge is to convert a large number of affiliated colleges into Autonomous degree granting colleges through graded autonomy in the span of 15 years and abolish the affiliating system in the country. As per NEP–2020, by 2025, the maximum number of colleges that can be affiliated by a university shall not exceed 300.

By 2035, all colleges currently affiliated to a university shall secure accreditation and become autonomous degree-granting colleges. The challenge is whether existing affiliating universities can mentor their affiliated colleges so that they could develop the capabilities and achieve minimum benchmarks in academic, curricular, teaching, assessment, governance, financial robustness and administrative efficiency. There will be a multidisciplinary approach across sciences, social sciences, arts, humanities and sports. The emphasis will be more on conceptual learning rather than rote learning. Creativity and critical thinking will be encouraged.

### **Challenge 06**

Availability of faculty in multidisciplinary streams is another major challenge. The distribution of faculty across streams or disciplines is not balanced at present. Thus, it is very challenging to attract and develop the faculty in those disciplines in which there is grave deficiency. Shortage of faculty is already being experienced even by the institutions of national importance. This challenge can partially be met by introducing positions of practice professors as well as research professors. Well-known artists, practitioners of various domains of work including industry, and outstanding researchers can be invited to join higher education institutions in such positions. Tenure positions with all the benefits which are extended to permanent employees can also help the higher education institutions to overcome the deficiencies without compromising on the merit.

### **Challenge 07**

Connect between multidisciplinary mix of courses and employability is going to be another challenge. For instance, will two students who have earned their BTech degrees with a different mix be equally employable? Similarly, can a highly rated university permit a student to join their BTech program in the third year if the student has completed the first two years of the same program from another university, which is not equally rated? Besides this, multiple entry

and multiple exit is going to be a difficult proposition. If a student of BTech program exits after completing first year only, then what kind of certification can be given to such a student. Will he/she be employable?

Every university in the country will be required to change the ordinances to allow a student to exit a program while facilitating the student to earn the academic credits based on the courses passed till then. The universities shall have to decide that how many times a student should be allowed to exit from a programme, and even how many times the entry into the same program should be allowed. The policy seeks to introduce revolutionary structural reforms at the higher education level. It simultaneously promotes three and four-year degree programmes at the undergraduate level. A student who has completed a four-year undergraduate programme with final year through research can directly be admitted in the doctoral programme. Won't this kind of provision make postgraduate programs irrelevant? Is this going to lead to the situation when postgraduate programs will be scrapped in line with the MPhil programme?

## Challenge 08

A student may have a good balance of credits from varied disciplines in the Academic Bank of Credits, but it will be very challenging for the universities to decide which certificate – diploma or degree – is to be awarded. One solution could be that universities may pick up the credits from the Academic Bank of Credits of a student selectively and advise him/her to complete the deficit by earning the relevant credits for the award of a particular degree.

Though flexibility in the higher education model through the concept of multiple exits is an important step for discouraging the number of dropouts, a question still arises on the value of such certifications and diplomas. The Indian psyche closely associates jobs with the degrees acquired. Hence, to implement the new system, out-of-date thinking needs to be changed first so that one can secure a job successfully only with a degree. This is a challenging paradigm which undermines and discourages other innate talents of an individual. Should the

importance for a degree fade away? Will prospective recruiters accept the candidates having certifications and diplomas instead of degrees? Will such candidates really be job ready? These questions will probably be answered with time only. We shall have to wait for the review of the situation at the end of at least 5 years from now.

### Challenge 09

It is becoming easier to get connected with a global reach. A world of information is available at one's fingertips with the click of a button or a simple voice command, and as technology continues to advance, the students need to grow their learning with it. Technology is no longer a motivating factor when it comes to learning – it is a *must*. It needs to be incorporated in the future education to ensure students are equipped with the skills to cope in a world dependent on technology. The reality is that classrooms can be anywhere anytime. The time has come when we shall see our students working on projects in virtual contexts with other students from around the world at any given moment.

We require internet penetration in remote areas because e-learning is the way forward, as witnessed during the pandemic. Digital infrastructure for this purpose will include digital classrooms and expertise-driven online teaching models. There will be a concerted effort to promote contemporary subjects such as artificial intelligence, design thinking, data analytics, machine learning, and holistic health which are thought to be the career choices of tomorrow. Advanced technologies will be required to overcome gaps in physical face-to-face teaching and lab infrastructure, matchable assessment schemes across institutions, career counseling sessions and training of teachers to master these new-age technologies. This will continue to be a major challenge in the next decade.

### Challenge 10

National Research Foundation will be established to cater to the needs of quality research. Historically, government has promoted research mostly in public sector institutions in India. There has been a bias against private institutions. The challenge is to overcome this bias and



provide a level playing field to good institutions of higher learning, irrespective of the source of funding for running an institution. Good institutions from both public and private sectors need to be treated equally for ensuring our presence on the global academic plane.

## CONCLUSION

Restoring the role as a *Viswa Guru* is not easy. However, it is possible only by upgrading the quality of education and research with an all-round consistent set of efforts on the part of every stakeholder of higher education in the country. Research collaborations and student exchanges will follow only in that case. It is very challenging to restructure the existing regulatory system driven by multiple authorities and rebuild the unitary regulatory system with four verticals, as a torchbearer for quality higher education. In spite of many challenges, it is a great opportunity to transform the overall higher education sector into an integrated cohort ecosystem of professional and vocational education.

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# OPEN UNIVERSITY THE MISSING REFERENCE IN NATIONAL EDUCATION POLICY–2020

Swaraj Basu

*The concept of an Open University was developed after prolonged deliberations, and based on experiences in other countries to make quality education accessible to all aspirants of higher education and to provide them an opportunity to learn at their own place and pace. It was envisioned as the response to the growing diversified demands for higher education in the country. In order to achieve our ambitious target of Gross Enrolment Ratio (GER), strengthening Open University and Open and Distance Learning (ODL) system is as much relevant today as it used to be in the 1980s, when the last national policy on education was developed. The way NEP looks at education as an agent of bringing major transformation in education to prepare the future generation with needed values and skills to meet the needs of future knowledge society and economy, it is very much required to give proper direction for the OUs to play a supportive role in shaping the future education in our country.*

## PRELUDE

The Open University system introduced in India in the 1980s, was envisioned as the response to the growing diversified demands for higher education in the country. The challenge at that point of time was two-pronged: one, how to bring in quality in the existing correspondence education, and the other to provide access to quality higher education to all. Quality and access still remain the major concerns of policymakers in higher education, but with the winds of change and the use of digital technology in a big way towards transforming modern life, new thinking has emerged to make

optimum use of technology in democratising education. The National Education Policy (NEP) announced recently by the Government of India aiming at major transformation in the domain of education definitely provides a much-awaited trajectory to bring in the desired changes to make education value and need-oriented. In the backdrop of this major policy document and the experience of the Open Universities functioning since nearly four decades, it is pertinent to look into the possible role of Open University in the coming days. More particularly, the way online education is going to impact learning, revisiting of the Open University has become imperative to keep pace with the changing times. This article is an attempt to relook at the thinking behind the concept of Open University, its scope, practices, its missing link in the NEP and the way forward.

### PHILOSOPHY BEHIND OPEN UNIVERSITY

Way back in 1988, Prof G Ram Reddy, the founder Vice Chancellor of Andhra Pradesh Open University, later renamed as Dr Bhim Rao Ambedkar Open University and Indira Gandhi National Open University (IGNOU), edited a book titled *Open Universities: The Ivory Towers Thrown Open*, which documents organisation, structure and working of Open Universities in various countries. The 'Ivory Tower' symbolises the traditional conventional university in which getting access was restricted by various rules and practices. The concept of an Open University was developed after prolonged deliberations and based on experiences in other countries to make quality education accessible to all aspirants of higher education and to provide them an opportunity to learn at their own place and pace. Introducing the National Open University Bill in 1985, in the floor of the Rajya Sabha in May 1985, the then Education Minister, Government of India, Shri K C Pant said, "Despite the tremendous expansion of the formal system of Higher Education since independence, the pressure on the system is continuously increasing. Indeed, the system has not been able to provide an effective means to equalise educational opportunities. The rigidities of the system requiring among others attendance in classrooms for example have been a disincentive to many learners. Moreover, the combinations of subjects are inflexible

and are often not relevant to the needs of the learners. This has resulted in a pronounced mismatch between the content of most of the programmes and needs of the development sectors”(CEMCA, 2016).

Elaborating the nature and scope of the Open University he said, “The Open University system of distance education would, on the other hand, be vastly superior to correspondence courses and, in some cases, even to formal programmes offered by regular colleges. The multi-media delivery system that the Open University would adopt would make for greater efficiency and a package of services like counselling, guidance, summer schools, contact programmes and laboratory facilities it can offer could ensure more effective interaction between the system and the learners. Above all, the flexibility in its processes which transcends the limitation of time, of time-bound and space-bound education would provide the Open University system an advantage even over the formal programmes ...

“The Open University will usher in a new era in educational technology by providing not only models but also generating manpower trained in the application of such technologies”(CEMCA, 2016).

The debates in the Parliament make the idea amply clear about the vision of the Open University. The idea of the Open University system was further given prominence in the National Policy on Education in 1986 announced by the Government of India. It was stated that the Open University system will provide more opportunities for higher education and help in democratising education. But proper thinking and caution were needed for its development and expansion (*GoI, 1986*). In fact, NPE 1986 and its subsequent amendment in 1992 envisaged a significant role of Open University (OU), particularly IGNOU. Establishment of IGNOU in 1985 was the outcome of prolonged discussions among policy makers at the national level and was envisaged as a major step to democratize education making quality education available to all. A national seminar was organised at Ahmedabad in 1986 by Association of Indian Universities (AIU), Gujarat University and IGNOU to deliberate on developments in distance education and deliberations of this seminar were later

on published by AIU in 1988.(*ALU, 1988*) This publication having contributions from established academics provides insights about futuristic role of distance education. Different from conventional face-to-face teaching universities, the Open University was envisioned as a forward-looking experiment providing education through innovative use of print and emerging educational technologies in a learner friendly environment. Open University strongly espoused the shift of emphasis from teacher-based education to learner-based education. The objective of an Open University was not primarily to replicate the conventional programmes but cater to diverse sections of the catchment area of education. The entire range of human resource development, not necessarily connected with conventional pedagogical concern, was expected to be the primary focus of an Open University. The Open University was expected to dismantle the walls that enclose narrow functional categories in conventional universities. It should offer programmes beyond the award of conventional Degrees or Diplomas in those areas which would meet the needs of continuing education of hitherto neglected regions and communities. ‘The main objectives of the Indian OUs as laid down in the National Policy on Education 1986 were:

- to reverse the tide of admission in formal institutions;
- to offer education to people in their own homes and at their own jobs;
- to enable students to earn while they learn;
- to provide counselling and guidance to people; and
- to take education to remote villages, through radio, television and correspondence courses’ (*CEMCA, 2016*).

Encouraging lifelong learning using innovative approaches may be summed up as the major thrust of Open University. Let us further explain this idea of Open University and its functioning by giving the example of IGNOU. In many ways IGNOU is a success story adding new value to education over more than three decades. Here is a list of some of its distinct academic credentials which have given it academic accolades nationally and internationally.

- IGNOU adopted credit system for all its academic programmes from its inception, when handful of universities in India adopted the credit system;
- Curriculum planning and development was done involving best academic minds in the country to make it innovative and need based;
- Development of self-learning material (SLM) keeping in view the need and ability of learners with the help of experts well known in their field of studies at the national level;
- Flexible learning and adoption of modular approach giving choice to learners to exit at any level and accordingly getting certificate, diploma and degree;
- Credit transfer facility giving advantage to learners to get the benefits of courses s/he completed at any time;
- Flexible duration for completion of courses;
- Semester system;
- Multiple options given to choose courses and accordingly getting certification;
- Bachelor's Degree Programme: students did foundation, application and elective courses and depending on maximum credits completed in particular subject major was given;
- Opportunities were made available to do certificate and diploma programmes along with degree programmes depending on choices of learners;
- Twenty-one schools of studies providing conventional degree programmes and various certificate, diploma programmes in diversified areas;
- Electronic media production centre with qualified academic professionals in media studies to produce academic programmes to supplement print course materials and also to provide radio counselling and teleconferencing facilities to learners;

- Wide network of regional centres and learner support centres to provide individual academic support to all learners; etc.

There are many more unique features that the Open University has developed over the years to reach to diverse groups of learners and helped in providing access to more than three million learners. So, in terms of learner enrolment, learners' profile, types of programmes and pedagogy, IGNOU has succeeded in creating a viable alternative of effective learning outside the 'Ivory Tower' of conventional education. A cursory glance at profiles of learners in IGNOU's degree programmes in the last five years gives an idea of effective intervention of IGNOU in reaching to diverse groups of learners who deserve to have access to quality education as stipulated in our educational philosophy.

Coming of digital technology in a big way and its application in education has made it more relevant that any futuristic policy document needs to take cognisance of this reality and suggest its adoption to supplement the existing educational infrastructure. It is in this backdrop if we look at NEP, there is deafening silence on Open University. This point is discussed in the following section.

### **MISSING REFERENCE OF OPEN UNIVERSITIES IN NEP–2020**

We cannot deny the fact that today we have 16 open universities, one more is coming in Kerala and around 100 dual-mode universities in India providing education to about 30 percent of total enrolment in higher education. In order to achieve our ambitious target of Gross Enrolment Ratio (GER) strengthening Open University and Open and Distance Learning (ODL) system is as much relevant today as it used to be in the 1980s, when the last national policy on education was developed. In fact, with the adoption of Right to Education policy at the national level and the changing complexities of required knowledge, the need for Open University (OU) and Open and Distance Learning has further increased. Therefore, the much awaited NEP is expected to provide a definite direction to the system of OU and ODL. NEP begins with a profound statement as follows:

“The national education policy must provide to all students, irrespective of their place of residence, a quality education system, with particular focus on historically marginalized, disadvantaged, and underrepresented groups. Education is a great leveler and is the best tool for achieving economic and social mobility, inclusion, and equality. Initiatives must be in place to ensure that all students from such groups, despite inherent obstacles, are provided various targeted opportunities to enter and excel in the educational system” (*GoI, 2020*).

The above observation makes amply clear the stated objectives behind NEP and the social and philosophical concern of providing the benefits of education to all. Making available high quality education with focus on equity and inclusion, NEP’s vision includes the following key changes to the current system:

- a) moving towards a higher educational system consisting of large, multidisciplinary universities and colleges with at least one in or near every district, and with more Higher Education Institutions (HEIs) across India that offer medium of instruction or programmes in local/Indian languages;
- b) moving towards a more multidisciplinary undergraduate education;
- c) moving towards faculty and institutional autonomy;
- (d) revamping curriculum, pedagogy, assessment, and student support for enhanced student experiences;
- e) reaffirming the integrity of faculty and institutional leadership positions through merit appointments and career progression based on teaching, research, and service;
- f) establishment of a National Research Foundation to fund outstanding peer-reviewed research and to actively seed research in universities and colleges;
- g) governance of HEIs by high qualified independent boards having academic and administrative autonomy;
- h) “light but tight” regulation by a single regulator for higher education; and



- i) increased access, equity, and inclusion through a range of measures, including greater opportunities for outstanding public education; scholarships by private/philanthropic universities for disadvantaged and underprivileged students; online education, and Open Distance Learning (ODL); and all infrastructure and learning materials accessible and available to learners with disabilities (*GoI, 2020*).

The above reference shows that out of proposed changes there is mention of online education and Open Distance Learning to increase access and equity without any further elaboration. The document provides detailed vision of proposed multidisciplinary universities, nature of research and teaching, transforming higher education institutions on the line of great Indian universities in ancient times with values and ethos, etc. It suggests, “In addition to teaching and research, HEIs will have other crucial responsibilities, which they will discharge through appropriate resourcing, incentives, and structures. These include supporting other HEIs in their development, community engagement and service, contribution to various fields of practice, faculty development for the higher education system, and support to school education. By 2040, all higher education institutions (HEIs) shall aim to become multidisciplinary institutions and shall aim to have larger student enrolments preferably in the thousands, for optimal use of infrastructure and resources, and for the creation of vibrant multidisciplinary communities. Since this process will take time, all HEIs will firstly plan to become multidisciplinary by 2030, and then gradually increase student strength to the desired levels. More HEIs shall be established and developed in underserved regions to ensure full access, equity, and inclusion. There shall, by 2030, be at least one large multidisciplinary HEI in or near every district” (*GoI, 2020*).

However, the role of Open Universities skips the attention of the policymakers as distinct higher education institutions. But growing concern for enhancement of GER to 50 percent was very visible in their thinking and prescribed the following solution.

“Institutions will have the option to run Open Distance Learning (ODL) and online programmes, provided they are accredited to

do so, in order to enhance their offerings, improve access, increase GER, and provide opportunities for lifelong learning. All ODL programmes and their components leading to any diploma or degree will be of standards and quality equivalent to the highest quality programmes run by the HEIs on their campuses. Top institutions accredited for ODL will be encouraged and supported to develop high-quality online courses. Such quality online courses will be suitably integrated into curricula of HEIs, and blended mode will be preferred” (*GoI, 2020*).

Reference to online education and ODL is visualised as the solution to raise GER and to fulfil the goal of inclusive education. Therefore, what is important to note is that distinct thought was not given to take stock of the functioning of OUs and to suggest corrective measures for further development and strengthening of OUs. What is suggested for ODL and online education is as follows:

“ODL and online education provide a natural path to increase access to quality higher education. In order to leverage its potential completely, ODL will be renewed through concerted, evidence-based efforts towards expansion while ensuring adherence to clearly articulated standards of quality. ODL programmes will aim to be equivalent to the highest quality in-class programmes available. Norms, standards, and guidelines for systemic development, regulation, and accreditation of ODL will be prepared, and a framework for quality of ODL that will be recommendatory for all HEIs will be developed. Finally, all programmes, courses, curricula, and pedagogy across subjects, including those in-class, online, and in ODL modes as well as student support will aim to achieve global standards of quality” (*GoI, 2020*).

It is not expected that the policy document provides all nuances of ODL and Open University. But, certainly, based on experiences of functioning of OUs, there should have been specific suggestions for future role of Open Universities as has been prescribed for other higher education institutions, particularly when many of the prescribed changes proposed in the document are very much in line with the existing practices followed in IGNOU and other OUs. Direction in NEP is more desired because the way the University

Grants Commission (UGC) notified ODL Regulations fails to take cognisance of the philosophy of ODL and OU, in particular.

## CONCLUSION

Let us begin with giving reference to the UGC (Open and Distance Learning Programmes and Online Programmes) Regulations, 2020. An earnest effort has been made in this regulation to provide the required framework and dos and don'ts for institutions providing ODL. But the way it prohibits offering of education in many professional areas through ODL definitely indicates that much more liberal and rational approach is needed to comprehend the philosophy of ODL as was done in the 1980s and is reflected in the Parliamentary debates of 1985 on Open University. The UGC Regulations, 2020, talks about prohibiting programmes and states, "Programmes which shall not be permitted to be offered in Open and Distance Learning Mode and Online Mode in Higher Education, are detailed as under:

- (a) The programmes in the disciplines (including their allied domains) of Engineering, Medical, Physiotherapy, Occupational Therapy and other Para-Medical disciplines, Pharmacy, Nursing, Dental, Architecture, Law, Agriculture, Horticulture, Hotel Management, Catering Technology, Culinary Sciences, Aircraft Maintenance, Visual Arts and Sports;
- (b) The research-based programmes such as MPhil and PhD;
- (c) Such other Programmes not permitted to be offered through Open and Distance Learning mode and/or Online mode by any concerned statutory or regulatory body or council, etc."(UGC, 2020).

This provision may be based on experiences of misuse and limitations of ODL but this completely negates the philosophy of lifelong learning for varied groups of learners and the mandate of OU. In the past the Government of India approved the establishment of schools of studies in IGNOU in various professional areas like Agriculture, Law, Engineering, Health, Sciences, etc., with the objective to provide opportunity of learning to those who for various reasons could not

have access and many of them are working professionals. Many ministries of the Government of India collaborated with IGNOU to take up the responsibility to offer skill-based training programmes for various groups of working professionals in different areas. All these academic activities are integral part of the OU. Even when one reads the NEP document, one finds the futuristic broad-based vision of education instead of putting education in rigid compartments of defined disciplinary boundaries. It suggests, “A holistic and multidisciplinary education would aim to develop all capacities of human beings -intellectual, aesthetic, social, physical, emotional, and moral in an integrated manner. Such an education will help develop well-rounded individuals that possess critical 21st century capacities in fields across the arts, humanities, languages, sciences, social sciences, and professional, technical, and vocational fields; an ethic of social engagement; soft skills, such as communication, discussion and debate; and rigorous specialisation in a chosen field or fields. Such a holistic education shall be, in the long term, the approach of all undergraduate programmes, including those in professional, technical, and vocational disciplines ...

“Flexibility in curriculum and novel and engaging course options will be on offer to students, in addition to rigorous specialisation in a subject or subjects. This will be encouraged by increased faculty and institutional autonomy in setting curricula. Pedagogy will have an increased emphasis on communication, discussion, debate, research, and opportunities for cross-disciplinary and interdisciplinary thinking. Departments in Languages, Literature, Music, Philosophy, Indology, Art, Dance, Theatre, Education, Mathematics, Statistics, Pure and Applied Sciences, Sociology, Economics, Sports, Translation and Interpretation, and other such subjects needed for a multidisciplinary, stimulating Indian education and environment will be established and strengthened at all HEIs. Credits will be given in all Bachelor’s Degree programmes for these subjects if they are done from such departments or through ODL mode when they are not offered in-class at the HEI”(*GoI, 2020*).

The way NEP looks at education as an agent of bringing major transformation in education to prepare the future generation with

needed values and skills to meet the needs of future knowledge society and economy, it is very much required to give proper direction for the OUs to play a supportive role in shaping the future education in our country. The unprecedented pandemic which the world has witnessed forcing learners and educators to opt for online education makes it clear that policy makers need to appreciate that along with classroom teaching, online education is going to impact education in a big way. OUs using the mixed mode of learning has immense capacity to play a decisive role in the desired transformation of education. OUs and ODL system as a whole deserves special focus in the national policy framework in the context of ongoing demographic and cultural changes, and proper strategies for better utilisation of the ODL system would be a right step in this direction. Experiences of the last nearly four decades since the coming of OUs and the transformation of ODL system suggest that revisiting OUs and ODL in general is the need of the hour. If properly planned, designed and supported by the appropriate use of technology and pedagogy, OUs can contribute more meaningfully to achieve our national goal in higher education. The pace of expansion of OUs has remained very slow, starting from 1982 as on date we are having only one national open university and 15 state open universities. Ideally speaking, all states should have an Open University which should work in collaboration with higher education institutions. At present, we have around 40,000 colleges in India and even if 20,000 colleges are provided with appropriate infrastructure to accommodate 500 students in collaboration with OUs, they would be able to enroll one crore learners giving huge impetus to GER. Synergy with industry is another area in which OUs may be allowed to have collaboration and this will in a big way dispel the notion of employable skills. Last but most important is that OUs have the capacity to generate its financial resources which is most important for sustained growth. Flexibility, multidisciplinary approach, use of technology, skill enhancement, aptitude of independent learning and critical thinking, etc., well defined goals of NEP are very much integral part of ODL. Therefore, we need to make serious interventions in national policy framework to suggest the futuristic role of OU, not merely as a passing reference and an appendage to conventional education but to make OU ready

with appropriate strategy to contribute to the nation building on equal footing.

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# BEYOND NATIONAL EDUCATION POLICY-2020 DEFINING THE BUILDING BLOCKS OF OUR FUTURE EDUCATION SYSTEM

Mriganko Das | Pawan K Dhar

*The recent National Education Policy (NEP-2020) has been a ground-breaking accomplishment by the government to reengineer the education system from the grassroots, reboot human intellect and create newer opportunities with a futuristic vision. The Policy has scaled down the routine mechanical approach of the current education system and provided an opportunity for the human intellect to blossom as a function of creativity. However, given that we are living in a world that is Volatile, Uncertain, Complex, and Ambiguous (VUCA), it follows that unfamiliar situations may soon emerge that one didn't factor in. With the introduction of NEP-2020, the rise of intelligence seems to have a bright future. Given the fast-paced world and the unforeseen challenges, the best practices of today may soon require a major upgrade. Due to this reason, there is a need to look beyond NEP-2020 and walk the space of unknown in search of the building blocks for the next generation of the education system.*

## PRELUDE

For the last couple of centuries, our education system was designed to create obedience, rather than intelligence. This comes from the British era of subjugation where the need was to create followers, not leaders. Ever since independence, our education system has undergone a massive evolution in terms of the content and delivery. Parallely, India has witnessed immense population growth and changing societal values leading to the development of novel survival strategies. The recent National Education Policy-2020 (NEP-2020) has been a ground-breaking accomplishment



by the government to reengineer the education system from the grassroots, reboot human intellect and create newer opportunities with a futuristic vision. It is a well recognised fact that to make NEP–2020 and its future versions more effective, implementation is the key, i.e., it's time to practice what we preach. Given the fast-paced world and the unforeseen challenges, the best practices of today may soon require a major upgrade. Due to this reason, there is a need to look beyond NEP–2020 and walk the space of unknown in search of the building blocks for the next generation of the education system.

### THE PURPOSE OF EDUCATION

Education must be a joyful experience. The purpose of education is not whipping of the body and mind but blossoming human potential to its fullest expression.

In its purest form, our traditional education system in Bharat was an emotional and life-long connect between the knowledge and the knower. The focus was not entirely on the content itself but building up of skills, knowledge, character and a deep connect between teacher and the student. For example, the son of an ironsmith generally used to become an ironsmith, the children of a farmer generally used to be connected to the farm and so on. Employment was not a big issue as parental practices were respected and carried forward. Though the system had its own advantages and limitations, employment needs were largely met within the family and people were happy carrying forward family businesses for generations.

For thousands of years, our skill and knowledge based educational system retained its strong character, mainly due to our cultural strength, reasonable population numbers, abundant environmental resources, and a strong value system. With a rapid population increase post-independence, immense pressure on natural resources, changing societal expectations, and rapid globalisation, our education system evolved towards information management than emotional and character upbringing.

The recent NEP–2020 restores the much-needed balance between information generation and emotional connection. The Policy has scaled down the routine mechanical approach of the current education system and provided an opportunity for human intellect to blossom as a function of creativity. Students would now be able to take sufficient breaks in their education and return to continue from where they left off. A number of much needed changes have made their appearance for the first time in the NEP–2020. The question is now that of implementation than investigation.

Given that we are living in a world that is Volatile, Uncertain, Complex and Ambiguous (VUCA), it follows that unfamiliar situations may soon emerge that one didn't factor in. The future NEP–2020 upgrades would demand additional discussions and plug-ins.

It has been well recognised that industries that are currently doing wonders may be gone tomorrow and replaced by jobs that nobody has perceived yet. Courses designed long back (and not revamped) widen the gap between the training and employability. A lot has been discussed, read and written but in our opinion the future NEP upgrades may need to move along the following skeletal system:

### **Redundancy of the Paper Degree**

It is increasingly clear that in future a paper degree may not be required for employment. Employers would want to see sharp hands-on skills and high levels of intelligence that goes beyond a degree. Recently, Elon Musk said, "*Applicants don't need a college degree for a job at Tesla*". The idea of degree-less employment is fast catching up, as competence turns out to be the only criteria of getting the employment. Imagine if this widely happens across various sectors, a structural change would be immediately required in the educational system.

It appears that in future, universities would offer 'a range of courses' than a 'fixed menu under a certain degree' programme. The silo nature of degree programmes may have to be dismantled at some point in time i.e., the paper degree may look like a bouquet of flowers created for a specific purpose. In this model a University would offer a basket of courses and students would fill up their basket according to individual tastes and expectations.

## **The Content**

The future course content may require periodic interactions among students, teachers, industries, thought leaders, social organisations and hiring consultants. Over time, the role of the government would be to actively review the content and ensure that students are not misguided but beyond a regulatory role, the development of content would be left to the educational institutions.

To enable this phase shift, there is a need to make a Special Task Force that will actively deliberate upon the topic, involve relevant stakeholders and design future courses.

## **The Technology**

For the last decade or two, the technology has become so advanced that a cell phone is doing most of the jobs of a computer. Communication has become faster, and problem-solving ability has gotten enhanced manyfold. We will see more rapid technological upgrades in future, requiring students to be technology savvy. The next generation of students would need to handle blended (offline and online) modes of education. They would be expected to be familiar with virtual classrooms, virtual meetings and virtual financial transactions and switch between the physical mode and virtual world, whenever required.

Technological advancements have moved the world from a mechanical typewriter to a cell phone keyboard to the speech-to-text mode. The next generation technology may involve ‘thought-to-text’ apps.

It is quite likely that in the near future, Augmented Reality (AR), Virtual Field Trips, 3D printing, game-based learning and biometrics may find applications in the educational institutions. The future generation of students would need rigorous training in the cutting-edge technologies to not only benefit from the technological evolution but also find novel career pathways.

## **Actualisation of the Five Senses**

Our five sense organs comprising of eyes, ears, nose, tongue and skin are ‘human USB ports’ for sensing, transferring, processing

and storing information leading to survival outcomes. Interestingly, animals, birds, insects, and microbes have unique sensory systems, unique compilation algorithms, and processing mechanisms, and experience the real world quite differently from us.

Interestingly, we see a lot of examples around us in the animal kingdom in terms of the use of sensory organs: an eagle has very sharp eyesight that can detect a mouse from several miles; a shark has a significantly superior sense of taste; dogs have a much higher sense of smell; owls can see clearly in darkness; and beetles have infrared sensors for a highly sophisticated sense of touch that far exceeds the human technology. In short, our experiences are only ‘compilations’ to the extent that is allowed by our sensory systems. In reality, they are partial, but they give us a ‘feel’ of the only version of reality available.

To fill the gap and enhance our sensory experiences, our future education system must provide special training modules to enhance human perception from an early age. This will not only augment the existing human capabilities but also provide new job avenues.

For example, some jobs require a heightened ‘sense of touch’, like massage therapists (applications sports injuries and health conditions), textile designer (to feel the fabric), ceramics maker (sense the clay) etc. There are jobs that require a good ‘sense of smell’ would be perfumer, food scientist, aromatherapists and so on. Jobs that require a good ‘sense of taste’ comprise of professional food tasters, chefs, and food critic. Jobs that require an excellent vision (sense of sight) include airline pilots, air traffic controllers, defence personnel, police, lifeguards, photographers, and surgeons. Jobs that require a heightened ‘sense of hearing’ involve sound engineers, musicians, firefighters and so on.

Thus, the next generation Education Policy must pay special attention on enhancing sensory experiences by refining all the five input devices.

### **Evolution of Intelligence**

The word ‘evolution’ means moving from lesser possibility to a higher one. Before the arrival of humans, evolution spontaneously occurred

from single cells to multicellular forms. With the straightening up of the spinal cord from animals to humans, consciousness found a new expression. Earlier, organisms didn't discuss or debate evolution even though they were going through it. However, with the arrival of humans, evolution became a much-debated topic due to installation of a highly evolved mind in the human system.

Unfortunately, education that was supposed to heighten intelligence and speed up the evolution of mind has resulted in its deterioration instead. Competence seems to have been replaced by complacency. This said the good news is that the process is reversible.

With the introduction of NEP–2020, the rise of intelligence seems to have a bright future. However, for intelligence to reach its peak levels, it is important that process of collecting and processing the information is conscious.

In the next phase of education, we need to train students to perceive the difference between compulsive and conscious actions, the need for information optimisation from the current phase of information overabundance and information toxicity. To help in this process, it is important that classic and scientific literature on consciousness finds its place in the school and college textbooks. In their early years of formation, young minds are impressionable and their capacity to adopt and adapt is remarkable.

### **Experiential Learning**

A conscious look at the simple process of eating reveals that the food served on our plate has gone through a long journey before reaching us. The process begins by preparing the field, sowing the seeds, providing the right nourishment to the plants, protecting them, harvesting the crop, delivering, and finally storing the products till they arrive in our kitchen.

Unfortunately, due to compulsive nature of living, most of the students are opaque to this entire process. We have become descendants of fast-food outlets and usually care for services and final products. The food is grabbed fast, eaten fast and forgotten fast. It's time that we make even the simple process of eating conscious.

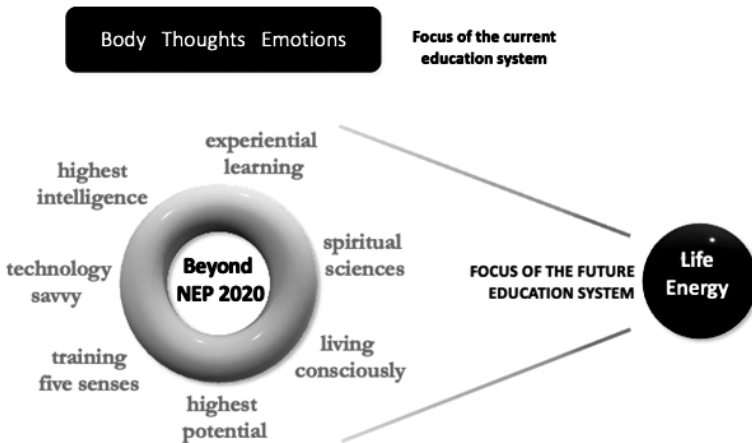
It would be great if cultivation of the plants, their nurturing and harvesting becomes part of the learning and evaluation process. Likewise, students must spend some time in animal farms to see how animals live and produce products for human consumption. The skill of farming may take several years to develop at a professional or expertise level. However, if students get a hands-on experience of how mud is converted into food, they will respect nature and optimise their consumption. The need is to be sensitive and turn education into an experiential experience (Fig 1).

### Living Consciously

The modern culture of fast travel, fast communication, fast-food and fast disposal has turned people into mechanical and insensitive consumers. Given the ever-expanding greed for power, money, and comfort, humans are the new pests plundering the planet at an unprecedented rate. Some back-of-the-envelope calculations indicate that if everyone in the world lives the life of an average American, we may need more than 3 planets for providing the supply.

The need of the hour is to bring conscious actions into our daily routine and read the user manual of life. Only when we live consciously, we can collectively find a stable life and solutions to the challenges. It's

Fig 1 : Summary of the Next Gen Education System



time for students to explore existential space early on in life and create societies based on responsibilities.

To enable paradigm shift from compulsion to consciousness, we must redesign curriculum to acquaint students with the non-physical dimensions of life, explore the life operating system beyond matter and complete the purpose of evolution.

Broadly, living systems exist at four levels:

- (i) gross body level (from atoms to organisms);
- (ii) thoughts;
- (iii) emotions; and
- (iv) life-giving substances.

Our current education system mainly functions at the first level, i.e., the gross level. Through social interactions, we gather thoughts and emotions and usually oscillate between these three levels only.

The final level, i.e., life-giving energy can only be logically predicted. Is there a periodic table of the soul? What needs to be added to 'solar energy' to make it 'soular energy'? Does the Universe run on a fixed soul budget or are brand new souls cooked into physical existence every moment? We have no clue. It's time to know our fundamental life operating system through experiential education.

The future educational system must delve upon these topics and make knowledge experiential. We are aware that phenomenal human beings came from this nation because education in its classic form was all about enhancing human capabilities. People didn't go to the university; they went to the universe. Going in was considered to be the way out.

In future, curriculum must be upgraded with the content that connects students with their Life, giving them new data, new perspectives and new career pathways. The need of the hour is to plan the next version of the National Education Policy and bring in additional features that enable students to experience their full potential.

## Life-long Learning

An interesting initiative of delivering education for adults has been successfully practiced for the past few years. However, the concept of learning later in life has evolved into another version, i.e., Life-long Learning. It essentially involves two components: (i) adults who did not receive the education due to various reasons; and (ii) alumni who are working in different positions and need a knowledge upgrade (mostly part time).

The former is a well-established program of the Government of India. Training alumni after their degree is something that may also be explored in the next version of the NEP–2020. In this new model, alumni may also be enrolled as and when University offers new programs that were unavailable when students graduated. The advantage of educating alumni is that application of training will be quick and effective. This admission and training could be outside the standard numbers of students enrolled for regular courses. To encourage more people join this initiative, special fee structure and tax rebates may be offered.

In general, the delivery of education at the primary and secondary levels has largely remained unchanged throughout the country. The moment a student delves deep into a subject, suddenly the bell rings and a teacher enters. This teacher starts to build the momentum when another bell rings. This process continues till students are exhausted with information overload and ultimately just wait for the last bell! You often see joyful faces coming out of the class than going in the class! This must change.

Education is a process of broadening the horizons of perception, memory, and skills, to make the recipient intelligent, competent, and responsible. However, the way education has been delivered in a rapidly changing society for the last several decades, students have largely turned into mechanical cogs for (Multinational Corporation) MNCs in this huge gear of employment – the top grader became a bigger cog and others became smaller cogs. Almost everyone is living mechanically with money as the main goal. The society urgently needs a fresh approach.



Reports indicate that approximately 40 percent of Europeans and 20 percent of Americans live on chemicals to keep themselves sane. These are the countries with some of the highest levels of education. Our students need to know that dominance and consumerism are not the way of life. The only way out is IN. That's where Bharat stands out from the rest of the world.

To ensure that the future generations are vibrant, competent, and live the life of highest accomplishment and fulfilment, our educational system may need periodic upgrades. The vision NEP–2020 needs realisation. Some of the steps that may be considered for future in this regard are:

1. Enrich Bharat with students who are highly skilled, intelligent, and have a strong sense of belongingness to this great nation.
2. Integrate fitness, sports, classical music, classical dance, Sanskrit, and yoga into formal education.
3. To build the right *samskar*, students knowing their *sanskriti* is as important as science. This does not come under the current education system.
4. Part of teaching should come from observing the nature. Organise educational tours to hill stations and forests. Sensitivity to life around us will bring in responsibility.
5. Identify standard human tasks in daily life and build problem-based-education around these, for example, how does a bike work? Embed Physics, Chemistry, Math, and Computers into the answer.
6. Teach leadership, cultural values, and social responsibility courses early on. Not many in our country are leaders. There are however many bleeders and pleaders. A sense of responsibilities more than rights need to be inculcated from the beginning itself.

Creating 'world-class' universities has become a global obsession as governments across the world have placed the science and education at the heart of their economic strategies. Global ratings are taken

seriously and efforts are made to plug-in the gaps between the idea and the outcome.

Brainstorming is on, self-help manuals are written, knee jerk responses are taken, and then it ends up largely as business as usual. The recipe for getting into the elite top 10 or top 100 in the world is no longer a secret. Even then, only a few universities make it.

In this context, at least two types of activities are needed in future: (a) define success and build a strategy for reprogramming the culture of an existing university towards achieving the goal; and (b) start a new university where expectations are predefined from the day one.

It is important to be best-in-the-class and first-in-the-class. Irrespective of the educational institution, the key policy interventions required for moving educational standards to the highest levels must be based on defining the need and filling the need. The need must be viewed as a challenge, not a problem.

The need of the hour is to continuously discuss the course content to make it sustainable with the future economy and environment situation of the country. Perhaps every five years, NEP–2020 may need to be reviewed.

Is our education system preparing young minds for a fast-changing future, or is the model becoming outdated? It is important to know how the economic winds are blowing domestically, in the region, and in the world and adapt to the change.

## CONCLUSION

Education and learning need to be life-long. There should be organizations, structure and funding directed towards that goal. Education must impart comprehensive survival skills, not just information and knowledge. Training programs may be routed through employers, private training providers and institutes of higher learning.

Quite frankly, nobody knows how the future is going to show up. One looks at existing trends, predictions and identify weak signals

to forecast the future. We are heading to a world where humans may also be competing with machines. Imagine a world where robots are colleagues. We better be on good terms!

In such a world, humans must work hard to find a place for their intelligence. Also, the diffusion and penetration of technology in the society must be slow, careful and context based. We need to prepare for job losses in future due to AI and increasingly looking at employment generating models for ensuring the survival.

It has been predicted that repetitive and non-emotional jobs will be lost more than creative and non-repetitive ones. In the former category there are jobs like security guards, radiologists, drivers, hematologists etc. In the latter category, there may be psychologists, psychiatrists, teachers, social workers and so on.

India needs massive foresight and forecasting studies to prepare for the future education and employment market. In future, leaders need to network extensively, be aware of the changing global situations and make students future ready.

Finally, to make the NEP–2020 and its future upgrades effective, it's time we successfully implement the new education policy and practice what we preach.

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<https://isha.sadhguru.org/in/en/sadhguru/mission/the-purpose-of-education>

# THE LATITUDE FOR MARITIME EDUCATION AND TRAINING TO MATURE UNDER THE INFLUENCE OF NATIONAL EDUCATION POLICY-2020

Rajoo Balaji

*Globally, many maritime nations assign an important space for Maritime Education and Training (MET). The contribution and growth of the Maritime industry is entwined with India's plans for the future. Shipping is a service industry and moves about 90 percent of the global trade generating almost half a trillion US dollars in freight rates alone. India has always found a place amongst the top nations supplying human resources at officer levels (over 85,000 officers in active employment) on board ships. India has over 200 ports (Major/Minor; Private/Government) and in the last FY20, over 700 million tons of cargo have been handled by these. About 95 percent of the nation's trade volume (70 percent by trade value) is done through maritime transport mode. It cannot be more emphasised that MET will play a key role in providing the skills and sense to the country's young workforce poised to carry the developmental efforts ahead. The role of a Central University such as Indian Maritime University will be significant for not only aligning the educational designs but also in opening the maritime sector to more number of aspirants from all strata of the society.*

## PRELUDE

Shipping is a service industry and moves about 90 percent of the global trade generating almost half a trillion US dollars in freight rates alone. India has always found a place amongst the top nations supplying human resources at officer levels (over 85000 officers

in active employment) on board ships. The ratio of Ratings is 1.6 for every officer employed and pushing at over 1,30,000 (Sagar Unnati; Ministry of Shipping Dashboard). India has been in the top ten nations in meeting the overall manpower supply to the global shipping industry.

Apart from this share of about 9.35 percent (DGS, India) to the global seafarer population of approximately 2 million, the presence of Indian professionals has been consistently increasing in the international middle and top shipping management circuits.

India has over 200 ports (Major/Minor; Private/Government) and in the last FY20, over 700 million tonns of cargo have been handled by these. About 95 percent of the nation's trade volume (70 percent by trade value) is done through maritime transport mode. India's prestigious *Sagarmala* Programme aims to modernise the ports with massive investments to the tune of over INR 1.4 trillion (*IPA; IBEF Statistics*).

Globally, many maritime nations assign an important space for Maritime Education and Training (MET). Most of the main Campuses of Maritime Training Institutes (MTI) are concentrated in North America (40.9 percent), Asia (27.3 percent), Europe (27.3 percent) and a good number have been in existence for more than 100 years (*Martid, 2019*). The contribution and growth of the Maritime industry is entwined with India's plans for the future. It cannot be more emphasised that MET will play a key role in providing the skills and sense to the country's young workforce poised to carry the developmental efforts ahead.

### **MET: INDIAN INSTITUTES**

While India's maritime trade and legacy can be traced back to centuries, a formalised maritime training can be sighted only in the 1900s. The traceable transformation milestones are: Training Ship Rahman, Training Ship Dufferin, Directorate of Marine Engineering Training (DMET), Training Ship Rajendra, Training Ship Chanakya, and now a plethora of MTIs numbering between 160-170 exist.

Almost all the MTIs focus on training manpower for ships. The legacy MTIs of DMET, TS Chanakya have been subsumed into Indian Maritime University (IMU). With over 15 MTIs affiliations in addition, IMU is the Nation's biggest body for MET.

In the last half/quarter of the 20th century, training for port personnel was formulated and Institutes with the support of Ports and the Government appeared. The Indian Institute of Port Management (IIPM), National Institute of Port Management (NIPM) (currently both subsumed under IMU), trained port personnel and administrative cadre in shipping/port management domains. Now, many institutes around the country offer UG and PG programmes for shore-side operations, management and trainings ranging from Ports/ Shipping/Logistics/International Trade management etc. IMU having internalised both the sea going and shore-based career trainings in its 6 campuses (well-spaced along the Western and Eastern coastlines), is poised to play a significant role into integrating the NEP's vision into MET.

### **MET: FORMAT METAMORPHOSIS**

Following the evolutionary trends of the European maritime nations, the concept of maritime training was to prepare an able male (now female aspirants are allowed) for the hardships of the sea. The elements of shipboard jobs were secondary and at times it was accepted that real training occurred on board when one was exposed to the act and scene. The apparently inseparable regimentation and the vocational (or trade) nature of the seagoing profession further explains why MET had traditionally been regulated by the Administrative arms of Transport and Shipping Ministries of the countries, rather than by the mainstream education departments.

Another significant aspect is the heavily regulated nature of shipping. Through the ages of industrialisation, as steel ships replaced wooden ships and engines and propellers replaced wind assisted sail ships, safety assumed predominance. Various international conventions followed, regulating how the ships were built and operated.

A major effort towards maintaining the MET standards is the Standards of Training and Watch keeping (STCW) Convention by the International Maritime Organisation (IMO). The STCW lays down the Regulations and specifies expected Competencies (including methods of assessment) for all shipboard personnel at three cognisable levels of responsibilities (support, operational and management). The MET formats at any part of the globe is oriented towards satisfying the STCW and the universal recognition of the Certificates of Competencies (of seafarers) is ensured in a way. The Maritime domain, thus has an established Internationalisation, which the NEP–2020 points as a needed achievable for Higher Education (HE) Institutions.

Furthermore, the IMO publishes Model Courses prepared by domain experts (generally, professionals with sailing/academic experience). These Model Courses are validated and prescribed only as a guidance, but administrations world over treat the content sacrosanct for inclusion in the curricula. Though this gives a basic standard, it also leads to complacency and evolution or updating of the syllabi get stunted.

An important element of the training format is the quantum of shipboard training (an extended internship) for Competency Certification. India has been no different but given the degree-desiring middle class, MET has managed to find an academic status.

While this has been holding true for the shipboard jobs, shore-based professional trainings have tended to stay on traditional UG/PG level approaches. Unfortunately, benchmarking with similar international programmes and industry driven training that need analysis (TNA) are found wanting for several of these standard programmes.

## **JUXTAPOSING NEP–2020 AND MET**

The NEP’s impetus to education is aimed at India’s global positioning ‘in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. “The NEP–2020 recognises the requirement of skilled workforce for

keeping up with the galloping digital intelligence technologies as also on the need for multidisciplinary abilities spanning across to sciences and humanities. The ambitious Policy proposes to revamp all aspects and align with the aims of SDG4” (*Quality Education: Sustainable Development Goal of UN*).

Among the listed 22 fundamental principles in the NEP-2020, a few such as emphasis on conceptual understanding, focus of regular formative assessment and life skills are entwined well at higher education (HE) levels of MET formats. The NEP-2020 recognises cognitive, psychomotor and affective domains of Bloom’s taxonomy (BT), which form the web of Outcome Based Education (OBE).

The teacher-requirement planning and forecasting proposed can be extended to MET at HE levels. Development programmes and Career Management Progression (CMP) can be charted to attract employed professionals (sea going personnel) with aptitude and aspirations. The Continuous Professional Development (CPD) mentions about the scope for pedagogical preparations based on Competency Based Training (CBT). This aligns well with the nature of training pattern being followed in MET for seagoing careers. Amongst the major problems faced by HE system the NEP lists, few areas are in agreement at various intensity levels considering the HE MTIs, as illustrated in Table-1.

A few points of Table-1 may be elaborated. The current seagoing-career curricula require alignment of cognitive skills and learning outcomes. This could be a low hanging fruit (short to medium term achievable in 2 to 5 years) since the universal formats are oriented towards CBT. The career management of faculty needs a better format. IMU has tried to address this by providing teaching-experience based entries into Masters and PhD Programmes especially for sailing personnel opting for academic careers. Research in core maritime fields have been very low in the Indian context. Marine fields on Naval Architecture, Ocean Engineering and Marine Sciences could show a better score. This is one area requiring attention and the engagement-intensities of universities like IMU will matter in the coming times. The regulatory mechanism for sea-career MET has traditionally been controlled by the merchant shipping regulatory arm of the Ministry of Shipping,



Directorate General of Shipping (DGS). India being a signatory to the STCW Convention, the STCW becomes the referral point for academic regulations integrated with the certification functions also. This format has been under strain largely due to the volumes.

**Table-1: Major Problems Faced by HE System: MET Status**

Less emphasis on development of cognitive skills and learning outcomes.	MET for seagoing career addresses this somewhat well since there are periodic revision mechanisms (e.g., STCW etc.) in effect.
Inadequate mechanisms for merit-based career management and progression of faculty and institutional leaders.	This is true for Faculty pool chosen from seagoing personnel.
Lesser emphasis on research at most universities and Colleges and lack of peer-reviewed research funding.	Vocational perspective of the industry towards Maritime profession need to change.
An ineffective regulatory system.	MET for sea-career has an intense regulatory mechanism in place.
Large affiliating universities resulting in low standards of undergraduate education.	Dilution of quality have been experienced only with MTIs having a narrow focus.

Though there are several Universities offering sea-career UG programmes, IMU has been the large Central University offering affiliation to a number of quality MTIs. This model must be nourished and the best way is to strengthen and broad base the curricula. The international standards having been ensured with the STCW, the generic skill sets for critical thinking and analytical skills have to be enhanced.

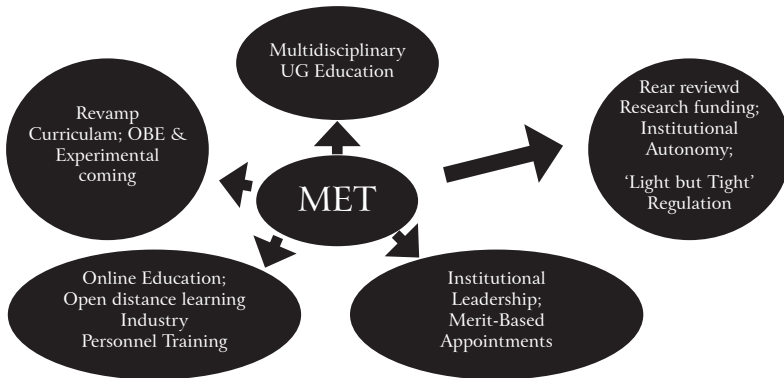
The UG programmes must enable multidisciplinary switches. For example, Marine Engineering syllabi can be built of Mechanical, Electrical, Electronic and Computing sciences/ clusters/layers, giving scope to the computer field etc. This will be a major spoke amongst the key changes being envisaged by the NEP.

Figure-1 depicts a few key changes that MET formats can adopt from NEP–2020. The satellite disc (distanced) reflects few changes which could be targeted in medium term range of 5–10 years, whereas the changes listed in other discs are achievable in short term (2–3 years).

An important inclusion is the ‘Industrial Personnel Training’ which implies development and delivery of training for incumbent industry personnel.

In terms of holistic education, subject matter on environment, pollution, waste management etc., can be quite easily elevated to credit courses of all MET (sea-career and shore career) since existing curriculums have accommodated such topics. The flexibility of year-long PG Diploma/Certification and Diploma with extra assimilation leading to Degrees can be refined. UG Programmes can provide exit and entry paths creatively (e.g., Lateral entry formats can be layered at extra levels). Digestible 4–5 year integrated programmes should be tailored with credit pools for Minors/Honours recognitions.

**Figure-1: NEP’s Key Changes to Current System: Targets for MET**



The choice of courses under multidisciplinary approach can include programmes in related subjects (e.g., Maritime History) and relevant subjects (e.g. Education & Training). MTIs introducing courses in Humanities are not uncommon. The course on ‘Intercultural Communications On-board Ships’ by a Romanian University is an example (Ungureanu, 2013).

The NEP underlines the importance of optimal learning and support to students and brings pedagogy to be the keyword. The proposed notes include:

- Innovative curriculum, pedagogy, assessments;
- Institutional Development Plan which includes the academic plans (e.g., Improvements in curriculum, quality of classroom transactions etc.);
- Support Centres to help the socio-economically disadvantaged;
- Online mode; and
- Global quality standards

MET has the advantage of being structured to international standards for sea-career programmes and the curriculum has been under revision with periodic amendments to the STCW Convention (*ibid* comments on Internationalisation). Concept training with equipment, real-scenario experience with simulator training have been in vogue and discussed. Online training experience also has been on record (*Stan, 2013*).

A central university such as IMU will have the correct leverage to translate the other proposed points. A comprehensive answer will rest with the curriculum and pedagogy approach.

## **PEDAGOGIC APPROACHES TO MET**

The MET may be seen under two broad areas, one involving education and training for sea-careers and other for the shore-based careers. The shore-based training domains would include technological (e.g., Naval Architecture; Ocean Engineering), pure science (e.g., Marine Sciences; Ocean Studies), management (e.g., Port Management, Logistics & Supply chain) domains. The first information needed for either would be the Training Need Analysis (TNA).

Given the nature of competency criteria prevailing in MET, a Constructivist approach can be proposed. The principles of Constructivism dwell on application of prior knowledge for new learning, learning processes strengthened with problem solving exercises, and following the knowledge that is changing. Though a certain amount of conditioning is expected in the approach, the ‘need for conditioning along a cognitive continuum’ has been established

with development of Bloom's Taxonomy (BT) etc., (*Cooper, 2007*). Further, it is opined that a comparison using BT would indicate that it is the 'degree of specificity' which differentiates vocational and academic approaches (*Manuel, 2017*).

The sea-career courses focusing on competencies will accommodate themselves better under OBE Models. An exemplar approach to the curriculum could be the adaptation of the Tier System proposed under the Body of Knowledge (BoK) for Global Maritime Professional (GMP) (*IAMU, 2019*).

The approach of the BoK is based on OBE. The first step involves ascertaining the knowledge-skills-attitude (KSA) required based on industry-external inputs (the exercise can be equated to a TNA). The BoK identifies four skill sets:

1. ***Foundational Knowledge & Skills:*** Fundamental Sciences, Mathematics etc., would come under this.

***Broader sense: Underpinning Knowledge***

2. ***Academic Skills:*** Problem solving, Critical thinking etc., will be addressed here.

***Broader sense: Research Skills***

3. ***Professional – Technical Skills:*** This would encompass a wide range from STCW domains, Maritime Management (Maritime Logistics, Maritime Law/Policy/Governance etc.). The skill sets include Risk assessments/management etc.

***Broader sense: Core-competence***

4. ***Professional – Soft Skills:*** Environmental concerns, Leadership, team working, ethics, cultural diversity/awareness, etc., feature under this.

***Broader sense: Humanities part***

The BoK Model then proceeds to build the framework on the Bloom's (revised) and Simpson's Taxonomies. Only one extension based on Cognitive Domain is taken up for a brief discussion herein.

Considering the Cognitive [C], Psychomotor [P] and Affective [A] domains, the original BT had recognised 6 progressive categories

– Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation – for the Cognitive domain. In the revised BT, the knowledge category ‘embodied’ both the Noun and Verb but was split into two dimensions. Nouns were changed to verbs at instances (e.g., Evaluate to Evaluating) and use of words as applicable to the intended outcomes (e.g., Understand to comprehend) were differentiated. This gave better strength to the objective-framing which included two aspects: the content and what is to be done to/with the content (*Krathwohl, 2002*). The revised categories of Cognitive domain changed to Remember, Understand, Apply, Analyse, Evaluate, Create.

For the Psychomotor domain, the Simpson’s Taxonomy has been applied. The BoK remarks that these were ‘more appropriate to the maritime context as they are more andragogical, relating to the development of skills in adults who may be taken out of their comfort zones’. The BoK then classifies the GMP under 4 Tiers and builds the action-verb matrices for each of the Tiers. The Tiers and the levels addressed are tabulated in Table 2.

**Table-2: GMP-BoK Model for Academic Progression**

GMP Tier A	STCW Operational Level Competencies	UG Level Degree
GMP Tier B	STCW Management Level Competencies	UG Level Degree (prerequisites: Tier A elements achieved)
GMP Tier C	STCW Management Level Competencies	PG Level Degree (prerequisites: Tier B elements achieved)
GMP Tier D	STCW Management Level Competencies	Doctoral Level Degree (prerequisites: Tier C elements achieved)

The requirements for 4 KSA skill sets (for [C], [P], [A]) are then individually tabulated with the categories. The skeletal matrix is projected in Table 3 for Cognitive [C] domain only.

Exemplar explanation of Table 3 projections: The categories (Remembering etc.) are the minimum levels to be achieved for the identified Tier (See Table 1). To illustrate, for GMP Tier D, a minimum level of ‘Creating’ skill in Academic Research is required under the Cognitive domain. It is to be noted, that this does not limit the other Tiers from elevating to higher levels of the domain. To illustrate, if a GMK Tier C Programme requires Mathematics at ‘Evaluating’ level, the same can be indicated.

In the projections of BoK, 6 (Foundational), 4 (Academic), 7 (Professional-Technical) and 11 (Professional-Soft) elements have been listed, but in Table 3 only one or two exemplar elements are projected (e.g., *Mathematics, Academic Research* etc., under column KSA in *italics*). As observed earlier, the BoK matrices are available for other two domains also.

The next step will be to identify the Intended Learning Outcomes (ILO) and generate matrices for each of the Domains for the respective KSA focus areas (e.g., Mathematics etc.). This will clearly define what the student is expected to do after the training exposure. In other words, the idea is to fit the TNA into the Domains, so as to identify the intensity of the skill set level so that the objectives (outcomes) may be framed accordingly.

**Table-3: Levels of Achievement (Cognitive Domain)**

KSA	Cognitive Domain[C]: Required Levels of Achievement					
	Remembering	Understanding	Applying	Analysing	Evaluating	Creating
Foundational						
<i>Mathematics</i>	A	A	A			
Academic						
<i>Academic Research</i>	A	A	A	B	C	D
Professional-Technical						
<i>STCW Competencies</i>	A	A	A	B	C	D
<i>Logistics &amp; Supply chain</i>	A	A	B	C	C	D
Professional-Soft						
<i>Environmental awareness, Sustainability and Stewardship</i>	A	A	A			

The BoK has guidance for these processes, which facilitates the OBE based course development. The BoK does not deliberate on framing the dissemination level objectives/outcomes, as a Detailed Teaching Syllabus (DTS) and lesson plans would portray. Such exercises also have been kept out of the scope of this discussion also. Comprehensively, the progression would include what remains to be done, i.e., identify the action verbs, develop the objectives and the DTS.

A possible variation applicable to the Table 3 matrix would be that the KSA elements can include other/different subject-names also. This approach would be similar to a conventional OBE exercise and well-suited for shore-based career programmes.

The focal point of BoK has been the Learning Outcome related to MET Programmes. The advantage of the BoK is that it can be used for both seagoing and shore-based careers. For shore-based career Programmes (e.g. UG Degree in Logistics, MBA in Port Management etc.), few of the KSA elements will vary but they can be conveniently plugged in and the DTS built up. A DTS which is student-centric can then be laid out for any MET Programme. The OBE approaches underlined by NEP can be well addressed thus.

## OTHER APPROACHES TO MET

There are casual to serious surveys available on the factors affecting MET. These vary from often repeated competency skills, communication, human errors, safety culture etc., to region/period specific ‘Piracy and Armed Robbery’ also (*Basak, 2016*). Competency-skills focussed MET formats (Sea-career) have relied on traditional and cognitive apprenticeship elements.

In the Instructional design, traditional apprenticeship would include coaching with models, whereas cognitive apprenticeship would require the student to articulate and explore ideas with the teacher (*Collins, et. al., 1991*). The experience shared would have meaning only if the real-world (real job) context is embedded. This is possible only if the teacher is an ‘experienced’ professional. Most MTIs have faculty comprising of ex-seafarers or those in service serving as visiting

faculty. The ‘marine person’ and ‘marine experience’ are ensured and what remains will be the ‘marine ambience’.

This idea has also been subscribed by the Ship-in-Campus requirements of DGS and the Marine Simulators. Another version of this is the real, floating, training ship (expensive training model). India has experimented with these models, while a few global institutions use these models in combination.

In MET, referring to sea going career, one of the attempts to bridge what is implied in the cliché, ‘pure mentation versus tool manipulation’ (*Resnick, 1987*) is the format for simulator training and assessments. Simulator Systems with robust physical and behavioural realisms will bring better value to the trainee. The theoretical thinking will get tethered better to the ‘tools’ (i.e., the applications).

In MET institutions a modern Full Mission Engine Room Simulator (FMERS) is used for training. The Simulator incorporates all the functionalities of all engine room machineries in a typical ship. The ERS can display the full range of typical Ship’s Systems and operations can be done on touch screen mode. The Trainer has the control and options to load a wide range of ship types/engines, etc., as also a wide range of scenarios. Similar simulators are in use for all kinds of ship operations (e.g., Ship handling, Cargo handling, Navigation/Communication equipment handling, etc.).

E-learning elements are already internalised in MET. Conceptually, at times, e-learning is seen as a ‘new training learning mode’ (*Chen et al., 2017*), but it has to be seen rather as a complementing mode.

Comparing the learning styles under ‘Experiential Learning’ viz., Diverging, Assimilating, Converging and Accommodating (*Varghese, 2020*), a good parallel can be drawn with the above discussed ‘hands-on’ methods with the accommodating style. Under Experiential Learning Theory, in a learning process, knowledge creation is through ‘transformation of experience’ (*Varghese, 2020*). In a competency training format and evaluations, a student experiences this (from pre sea training/experience to post sea experience/training). The scope for Experiential Learning exists for conventional shore-based career programmes also (e.g. MBA etc.) wherein industry professionals



deliver segments of the syllabi. Role-play, case-study method and the industry-internships will also have space for the ‘experience transfer’.

## CONCLUSION: PANDEMIC EXPERIENCE AND FORWARD

The pandemic in a sense has paved new paths for the education management. The experience realised by all generations will be a forceful driver for the way in which the future classrooms will look. The idea of blended learning will get traction and the pandemic period experience will be relied upon especially for the online format. The requirements for human resources (e.g. faculty acclimatised to this mode, etc.) and equipment resources (e.g. instruments, connectivity peripherals, etc.) have been emerging as also the difficulties (e.g., connectivity issues in remote areas). The online mode, development of MOOCs, Learning Management Systems (LMS), Simulator usage etc., will gain momentum. Development of virtual laboratories and short-format learning modules with copious audio-visual content will emerge. Concept clearing will get preferred over rhetoric-content. Formative assessments will be part of most dissemination-assessment schemes.

Concerning Shipping, one of the key issues identified for 2020 is the Review of the STCW (ICS, 2020). With MET getting focus in India’s Maritime Vision 2030 also, these exercises will be timely. The role of a Central University such as Indian Maritime University will be significant for not only aligning the educational designs but also in opening the maritime sector to more number of aspirants from all strata of the society.

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# NATIONAL EDUCATION POLICY–2020 CHALLENGES AND STRATEGIC OPTIONS

Bhagwati Prakash Sharma | Jaya Sharma

*Being home to one of the largest educational networks of the world, quality and innovativeness in the higher education of the country holds the key to it. Presently, India ranks 48th on the Global Innovations Index (WIPO, 2020). The industry in India largely runs ‘assembly lines’ or ‘formulation units’ based upon imported original equipment or active intermediates of entire downstream value chains. Assembling and formulating as such do not involve much of the R&D. Almost 70 percent of Active Pharma Ingredients and 90 percent of the solar panels being used are imported from China. Therefore, the higher educational institutions (HEIs) need to assume pivotal role in rolling out sunrise technologies, help the ailing industry clusters numbering 400 plus suffering from technology obsolescence. This problem of low innovativeness needs to be remedied by the academia with an explicit and unambiguous cue from the NEP–2020.*

## PRELUDE

The vision highlighted in the National Education Policy, aims *inter alia* at transforming India into a knowledge super power (GoI, 2020). Being home to one of the largest educational networks of the world, quality and innovativeness in the higher education of the country holds the key to it. Presently, India ranks 48th on the Global Innovations Index (GII) (WIPO, 2020). With a minor share of 1.6 percent in the Global Patent Filings and a further negligible share of 0.96 percent in Industrial Design Registration Filings, our initiatives in protecting country’s vast treasure of Geographical Indications (GIs) and in developing Integrated Circuits (ICs) – the two equally important Intellectual Properties (IPs) – is even more dismal. This problem of low innovativeness needs to be remedied

by the academia with an explicit and unambiguous cue from the NEP–2020.

## HIGHER EDUCATION CAN BRING ABOUT A SEA CHANGE

India has been endowed with thousand plus universities, including the other degree awarding institutions and 50,000 plus colleges, enrolling 37.4 million students (*Nanda, 2020*) equaling the population of Canada. We are home to 17.6 percent of global population with the highest share 20 percent of world's youth, and our 138 crore headcount far exceeds the 76 countries of the twin continents of Europe and Latin America. However, the country has mere 3 percent contribution in world manufacturing (*WEF, 2020*) and trails behind even Singapore, having 7.5 times of our high-tech exports, in spite of having mere 0.02 percent of our area. Singapore ranks 5th, China 1st and India 22nd in high tech exports (*indexmundi.com, 2019*). China, with almost the same share of 18.4 percent in world population has 28 percent share in world manufacturing (*indexmundi.com, 2019*) and 30 times more high-tech exports than India. Quality and innovativeness in higher education with a focus on creating IP needs to be given priority.

A simple comparison of the patent filings considerably explains this gap. China files around 15.42 Lac patents per annum against just 50 thousand patent applications being filed by our innovators. As already pointed at the very outset that the industry in India largely runs 'assembly lines' or 'formulation units' based upon imported original equipment or active intermediates of entire downstream value chains. Assembling and formulating as such do not involve much of the R&D. Most of the mobile phones to metro trains and from passbook printers and ATM dispensers to TV Sets and washing machines etc. are being mostly assembled from imported components. Almost 70 percent of Active Pharma Ingredients (APIs) (*Saha, 2020*) and 90 percent of the solar panels (*Adani, 2020*) being used are imported from China.

Therefore, the higher educational institutions (HEIs) need to assume pivotal role in rolling out sunrise technologies, help the ailing industry

clusters numbering 400 plus (*GoI, 2020*) suffering from technology obsolescence. “HIEs have to endeavor” to collaborate with industry, government, and tertiary sectors to enable and help them to cope with the change and help businesses along with various other organisations in improving their productivity (*OECD, 2017*). ‘University-Industry Consortia’ can help to build a research and innovation ecosystem in the country. Productivity and economic growth are largely driven by innovations which rely on research and human capital. Higher education significantly contributes to the development of both (*Ellie, 2015*).

### **NOBEL TALLY: ISRAEL AND INDIA**

Nobel prizes won by the faculty members, scholars, alumni, and other associates of a university are also part of the acid test for quality and innovativeness. There are 100 plus HEIs world over having Nobel laureates affiliated to them who have won Nobels after 2000 in the field of science. But India doesn’t have single university. An Israeli university, Technion, is among the top ten universities of the world on the basis of its Nobel tally after 2000 as per the list of the Times Higher Education (*Ellie, 2015*). Any Indian university including the institutes of national importance like IITs, IIITs, AIIMS are yet to open an account in terms of bagging a single Nobel for research in science in India since 1930, after CV Raman. There are 150 plus universities in the world having 5 or more Nobel laureates affiliated with them and 80 universities with 10 or more Nobel laureates.

### **BENCHMARKING WITH INNOVATIVENESS AND IP CREATIONS OF GLOBAL LEADERS**

The NEP–2020 envisions a global best education system (*Ellie, 2015*). Therefore, it is high time to benchmark our performance with the innovativeness and IP creations of global leaders. The HEIs in India have to take cognisance of the gap between the IP scores of India with those of the global best. Table numbers 1 and 2 shall help the HEI stakeholders in India to take a call.

**TABLE-1: FILINGS AND GRANT OF PATENTS:  
INDIA V/S IP GIANTS**

Country	Applications filed <sup>1</sup>		Patents Granted	Ratio of Applications Withdrawn	Average pendency weeks	Filling under PCT	Ratio of Patents granted V/s filings
	No. of Applications	Share of resident filings <sup>2</sup>					
Total	33 Lac					2.33 Lac	
China	15.42 lac (46.4 percent)	10 percent	4.32 lac	-	22.5	53,345 (21 percent)	28 percent
US	5.97 lac (18.1 percent)	51 percent	3.07 lac	8.1 percent	-	56,142 (22.2 percent)	51.42 percent
Japan	3.13 lac (9.5 percent)	16 percent	1.94 lac	1.3 percent	14.1	49,702 (19.7 percent)	62 percent
South Korea	2.09 lac (6.33 percent)	17.5 percent	1.19 lac	1.7 percent	15.8	17,014 (6.72 percent)	57 percent
India	0.50 lac (1.6 percent)	65 percent	0.13 lac	72.5 percent	52.0 <sup>3</sup>	2013 (0.8 percent)	26 percent

1. Number of applications filed into the patent office of that country. Filings abroad are additional.
2. 65 percent (highest) filings in India are by foreign nationals or companies.
3. Ratio of applications withdrawn is highest 72.5 percent in India in the world.
4. Pendency of 52 weeks is second highest after Brazil, inspite of 521 patent examiners, who are processing mere 50 thousand applications and granting 13 thousand patents, wherein withdrawals are 72.5 percent. On the contrary, South Korea has little higher number of 875 patent examiners processing 2.09 lac (4 times of India) and granting 1.19 lac patents (9 times of India), where the withdrawals are mere 1.7 percent. So, Korea has a pendency of only 15.8 weeks.

*Source:* World Intellectual Property Indicators-2019: World Intellectual Property Organisation

**TABLE-2: INDUSTRIAL DESIGN COUNTS IN FORCE**

Country	Design counts Applied in the Country		Total Design Counts Originating	India Design Registrations in Force	
	Number	percent		Number	percent
Total	13,12,600	100	-	39,88,900	100
China	7,08,799	53.99	9.57 lac	16,10,616	40.37
US	47,137	3.59	3.9 lac	3,36,116	8.42
S. Korea	68,054	5.18	1.14 lac	3,44,560	8.63
Japan	31,468	2.39	1.41 lac	2,57,157	6.44
India	12,632	0.96	0.15 lac	86,288	2.16

*Source:* World Intellectual Property Indicators-2019: World Intellectual Property Organisation

## **THE NEED TO EMBARK ON A STRATEGIC ROADMAP**

A strategic roadmap to revamp the curricula and revisit the thrust areas for research is the need of the hour. Curricula should have in-depth coverage technologies and products either where India is experiencing fast technological obsolescence or where it is dependent upon external supply chains for want of appropriate and affordable technologies. Sunrise sectors and sunrise technologies too need to be focused upon in the PG dissertations and doctoral researches, which would rejuvenate existing sectors and technologies or offer new solutions to a host of present day problems. To sum up, there are three major challenges within each of the hundreds of verticals. A single case example from each of the three categories would be enough to give us a clue. The cases are:



### **1. Phasing out of Products**

All fossil fuel vehicles would be phased out before 2030. So, the petrol and diesel engines comprising 2000 plus parts and being manufactured by several thousand component manufacturers would become redundant, as these engines would be replaced by an electric drive of 20 components. India is yet to develop a technology for the same.

### **2. Technological Obsolescence**

A Large number of MSME Clusters, ranging from glass to ceramics and from textiles and garments to foundry products, have been witnessing closure of a number of units due to technological obsolescence.

### **3. Sunrise Sectors and Technologies**

Emerging Technologies like nanotechnology, molecular biology, Artificial Intelligence, including machine learning based predictive analyses, 3D printing, robotics, mechatronics would fast replace the existing production technologies and sectors. Imported AI products for crop yield prediction, medical diagnostics, therapeutics, self driven cars, tourism, fine arts, performing arts, homeland security, border security, defense & armaments and so on are likely to flood the markets where India is yet to endeavour.

## **CONCLUSION**

Therefore, all HEI stakeholders must change this belief that the industry has to lead in enhancing innovativeness in the country. It is time that the HEI stakeholders must sensitise themselves to the needs of the industry for homegrown technologies to minimise our over-dependence on imported original equipment and active ingredients in the downstream value chain in manufacturing. HEIs must raise their capabilities to collaborate with industry, government, and tertiary sector to enable and help to cope with change and businesses and other organisations in improving their

productivity (Ellie, 2015). The vast network of HEIs has to focus on developing homegrown technologies—both affordable and tempting for the industry to say goodbye to the imported state-of-the-art technologies.

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**GOVERNANCE, QUALITY, FINANCE AND  
INTERNATIONALISATION**



# INDIA AS GLOBAL EDUCATION DESTINATION STAY HERE, STUDY HERE!

Anoop Swarup

*India is in the throes of developing its course content to be at par or even ahead of the world. However, there still appears to be a blissfully poor practical experience in most institutions and a further lack of opportunities in developing particular skills and conceptual learning for atmanirbharta, which is critical to India's innovation enterprise. There are many students who wish to take the road less traveled and are on the lookout to advance their studies abroad just because their desired choice is not available in our country. In cases where the course is available, universities in India lack the finance, motive, expertise and the accreditation to a better career path. The National Education Policy-2020 ushers in a bold new paradigm that may make India as a much sought-after education destination for not only the youth in India, but also for those seeking new frontiers of knowledge from across the globe. To bring to India the best from globally renowned institutions while also retaining our own students, will be the way forward for the future, particularly in an online and digitalised virtual new normal of tomorrow.*

## PRELUDE

The National Education Policy-2020 ushers in a bold new paradigm that may make India a much sought-after education destination for not only the youth in India but also for those seeking new frontiers of knowledge from across the globe. Presently, India is just next to China in terms of international student enrolments and mobility based on a study made by QS World Rankings. This may change post- pandemic when we may become the number one country, largely due to the

China aversion now emerging across the globe and vice versa, and also due to the rising population in India and its economic wellbeing. It also holds true that the population of youth in India that is below the age of 25, more than 50 percent accounts for leaving India's shores full of talent and budding entrepreneurship. There are a few insights for us to develop a national strategy for promoting stay in India and study in India. The US National Science Foundation's Survey reveals that almost 80 percent of students from India and other Asian countries choose to remain in America after completing their graduate and doctoral studies. Here is an attempt to derive an approach paper to a future India where students from not only our own country but also abroad find our country an attractive study destination.

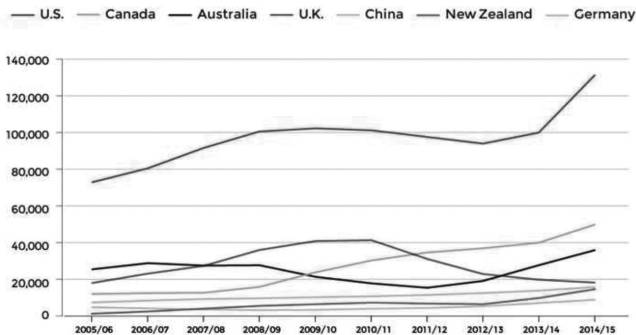
### **EQUITY, ACCESS AND QUALITY PERCEPTIONS IN INDIA**

Indeed, the prevailing perceptions in our country drive not only public policy but also societal behavior, so it is pertinent to change the myths and our understanding as to why our youth studies abroad? To circle back, some pointers are:

- a) It is a prevailing notion that studying abroad will help our youngsters stay ahead of those who stay at home and study at local colleges and universities.
- b) It is an assumption that an international qualification both at Bachelor's and Master's levels have global recognition.
- c) It is perceived that by studying abroad, one's language, vocabulary, and communications skills—both spoken and written—will improve.
- d) As a gateway to employability prospects in India and abroad, perhaps the perception that students who return and seek job opportunities will have them in plenty.
- e) There are companies that consider international exposure as an important factor when making decisions on a candidate

- and a degree earned from abroad demonstrates not only a go-getter attitude but also better experiential learning.
- f) Our youth who choose to study abroad, do try new activities and sports that may not even exist in India.
  - g) Also, the university abroad may offer exciting extracurricular meets, clubs, and classes that help the youth to broaden their horizons.
  - h) Our youth get an unbounded opportunity to make friends across the world as they join alumni, clubs, societies, organisations and online portals that connect them for life.
  - i) Many non-resident Indians abroad form connections for life, much more emphatically than those who study even in the best institutions in our country.

**Change in Indian Student Mobility by Receiving Country; 2005-2015**



Source: *World Education News + Reviews*

## MEASURES TO MAKE INDIA A MORE ATTRACTIVE DESTINATION

What must change pursuant to the NEP-2020 the youth find India as a more attractive destination. To ensure, here are some measures.



## **Making Admission Easy and Attractive**

*Ensure ease of competition in admissions and a friendly ambiance on campus and in the classroom.*

- a) Too much competition is a dampener, even to the brightest, as admissions to India's top-ranked institutes such as IIMs (Indian Institute of Management), IITs (Indian Institute of Technology) and AIIMS (All India Institute of Medical Sciences) are through a very straight jacket and inflexible competitive process implying that most of our youth who make it are coached in select coaching institutes and schools that stress on rote learning approach.
- b) Studies reveal that on average, a student has less than a 50 percent chance of securing admission to a highly reputed institution. To secure admission is very intense based on study and discipline such as the Joint Entrance Examinations (JEE mains) for engineering colleges and the National Eligibility and Entrance Test (NEET) for medical colleges.
- c) Even the brightest students give up hopes of securing admission to a university of their choice and with no guaranteed admission, but they have the final option of studying abroad. Therefore, eventually, for bright students' admission at a highly ranked foreign university is perceived to be comparatively better and easier.

## **Ensuring Alternatives**

*Better choice of electives, lateral movement, flexibility, and more study options.*

In India, there is too much reliance on delivering popular STEM (Science, Technology, Engineering and Mathematics) courses in most institutes.

The institutions in India in the government domain do not have the initiative to improve subject choices or the flexibility to change options because of a rigid centralized decision making system.

The institutions in the private domain mostly run the courses on the beaten track with little choices, imagination or creativity because of lack of autonomy from regulatory bodies and also for want of financial resources.

In our country, private enterprise is still in an evolving stage where entrepreneurs do not lose control of the institutions that are being driven more by money making and even profiteering mindsets than by any broad or philanthropic considerations.

There are many students who wish to take the road less traveled and are on the lookout to advance their studies abroad just because their desired choice is not available in our country. In cases, where the course is available, universities in India lack the finance, motive, expertise, and accreditation to a better career path. No doubt, there is a rich array of courses on offer to international students in countries such as the US, UK, Australia, and Canada.

These countries offer studies in some of the most contemporary and unconventional fields like entertainment, sports and psychology and are a rich repository of new knowledge and excitement to our youngsters. For a student who wants to study creative arts or graphics or filmmaking or for that matter even cutting edge topics such as Block Chain, Artificial Intelligence, Robotics, Cloud Computing techniques, Nanotechnology or Biotechnology, India has fewer opportunities to choose from.

Also, for someone pursuing a STEM course abroad, the choices are very broad across the world, for instance in the UK there are affordable universities offering a range of engineering programs such as mechatronics, astronomy, space engineering, aerospace, telecom and electrical engineering to motor sports, textile and aeronautical engineering.

## **Achieving Quality and Excellence**

### *Achieving excellence in the quality of our higher education*

India is in the throes of developing its course content to be at par or even ahead of the world. However, there still appears to be a blissfully poor practical experience in most institutions and a further lack of

opportunities in developing particular skills and conceptual learning for *atmanirbharta*, which is critical to India's innovation enterprise.

Many of our youngsters struggle to get good internships, not to mention job placements on graduation. Well, the issue is primarily exasperated because of the apathy of our institutions to promote better understanding of ideas and precepts instead of emphasis on rote learning.

In a stark contrast, institutions abroad engage students in hands-on teaching and learning, class participation, team spirit and leadership sessions as well as dialogue and role play, case studies, and practical off-and-on-campus experiential learning through fun and meaningful exchanges.

The best part of the institutional drive for excellence is through blended learning where flexibility is tailored and inbuilt into courses and decentralised decision making ensures student's interest. The teaching, learning and earning quotient with part-time work that adds to the overall appeal of a degree abroad.

Thus, as in the US, where a lot of weightage comes due to universal recognition, active faculty earns global recognition on their own research credentials and academic merits, in India too we should not only empower the academia with complete decision-making autonomy but also encourage final authority in all matters of the institution to only the academic fraternity.

Let us take the best example of the Ivy League institutions, where attending a university such as Harvard, Yale, or Stanford offers not only name recognition but also great alumni networks spanning the globe.

There is considerable help given in the forming of such networks which comes with outstanding experience sharing and academic learning prospects even outside of the Ivy League in countries such as in Australia and Canada.

For students, most innovations are a joint enterprise that results in future business opportunities. The culture of innovation and technology – be it health care, artificial intelligence, or even finance

– is fostered and propelled by breakthroughs through research and development departments of an enterprise working in cohesion with a university.

A culture of creativity and innovation which is kickstarted at the school level and carried to the university can be embedded in India too where students can benefit hugely from access to technologically savvy labs and other research facilities that universities offer through a University–Industry Interphase.

### **Creating Livelihood Prospects & Immigration Pathways**

**The global ambiance and the better livelihood prospects through immigration pathways.**




Indeed, immigration is one of the top reasons why our youth turns to international campuses where attracting talent, skills and excellence are promoted particularly at graduate levels. Most countries offer attractive job prospects through their flexible immigration policies that allow students to seek employment on successful completion of their studies (Table-1). Here are some examples.




- a) Let us study examples from countries such as Canada and Australia that have made several recent changes to give improved options to international students to amalgamate learning, living, studying, working and even settling in the country. The Immigration, Refugees and Citizenship Canada (IRCC) of June 2018 announced the launch of the Student Direct Stream (SDS) to replace the Student Partnership Program (SPP), ensuring consistency and efficiency in the student visa application process. As a result, students from India, China, the Philippines and Vietnam could benefit from faster visa processing times apart from many other incentives. Perhaps in India too we can promote better skilling and talent migrations that not only stop the brain drain but also reverse the tide of our best youth from going abroad. Australia and Britain have similar approaches to attract the best talent to their education fold.

- b) In Canada, previously, the SPP system allowed students to apply to only a limited number of about 47 communities. However, now a college and university with a unique Designated Learning Institution (DLI) number come directly under the SDS system, which gives international students a range of higher education options to choose from. A similar approach to the Commonwealth Register of Institutions and Courses for Overseas (CRICOS) registration process is followed in Australia too.
- c) We may note that the Student Direct Stream complements the Express Entry System in Canada, implying that students who successfully complete their studies through the SDS process will be on the path to permanent residence and Canadian citizenship.
- d) In New Zealand, Australia, Germany, and the US, similar approaches to attract students – both domestic and international – by the grant of deferred loans and subsidized tax incentives for study have done wonders.
- e) The Comprehensive Ranking System (CRS) of Canada is a point-based system used to assess and score immigrant profiles and rank them in the Express Entry pool. The CRS determines if an immigrant is eligible for permanent residence status in Canada or not. It ranks each profile based on several determining factors, such as age, education, work experience, language ability and adaptability. The Comprehensive Ranking System now awards 15 points to international students holding a diploma or certificate earned on completion of one or two-year courses obtained in Canada, thus promoting the local academic institutions. Likewise, holders of certificates, diplomas, and degrees earned in three years or more, including a Master's, professional or doctoral degree, are awarded 30 points.
- f) In New Zealand, Australia, Germany, and the US, similar

point-based approaches have been promoted in different forms with tremendous success.

**Table-1 Immigration Policies of Different Countries**

Country	Cost	National Marketing Strategy	Path to Immigration	Work Permits
USA 	Highest	No	No	On-campus work for up to 20 hrs/week: 12 months total of Curricular Practical Training (CPT) during the study  Post-study: 12 months Optional Practical Training (OPT); STEM majors can extend the period to 36 months
Canada 	High	Yes  Int'l Education Strategy	Yes  Extra points for immigration applicants with Canadian credentials	Work Permit not required: during study for up to 20 hrs/week  Post-Study work-permit: for up to 3 years
UK 	High	Yes  Int'l Education: Global Growth Prosperity	No	20 hrs/week: if you are in a degree programme or above at a higher education institution  Post-study work permit: cancelled in April, 2012.  Doctorate graduates: get one-year extension

Country	Cost	National Marketing Strategy	Path to Immigration	Work Permits
Australia 	Moderate	Yes National Strategy for International Education 2025	Yes Extra points for immigration applicants with Australian credentials	20 hrs/week during the study; unlimited hours during breaks  Graduates with a minimum of 2 years in Australia can get a post-study work visa for 2 years
Newzealand 	Moderate	Yes Draft Int'l Education Strategy for New Zealand to 2025	Yes Extra points for immigration applicants with New Zealand credentials	20 hrs/week: during study  Post-study: 12 months permit
Germany 	Low	Yes Strategy DAAD 2020	No	90 days/year: on a student visa  18-month visa: extension post-study

Source: World Education News + Reviews

## Creating Cutting Edge Research Opportunities

*Cutting edge and better research opportunities with pathways to a career in a national research enterprise*

Basic research has to be promoted by the government through grants and projects that lead to continuing employment as recommended by the Report of the National Knowledge Commission (NKC, 2008). Students pursuing subjects, particularly in research-centric areas like Biology, Astronomy, Astrobiology, Avionics, and Space Research. Nano Sciences or Pharmacy do not receive enough support from Indian institutions in terms of either the infrastructure or resources. Universities in America, Australia, Canada, and Britain offer abundant resources to provide students with the best labs and the sophisticated

technologies, equipment, and infrastructure to conduct in-depth research. Our students choose research courses abroad because of favorable environs and conditions, flora and fauna as also the habitat in those specific locations.

## OUT OF THE BOX APPROACHES FOR STAY IN INDIA & STUDIES IN INDIA

We do need out-of-the-box approaches and lateral thinking to propose 'Stay in India' and 'Study in India' initiatives not only from the best practices and learning at par with that of foreign universities, but also our own unique conditions in India. From the standpoint of surprisingly simple tweaking of existing traditions to major policy shifts, we need a more holistic study abroad experience in India. Yes, we have to promote scholarships; ensure a pathway to better jobs in India, provide learning with potential to travel abroad; giving back to India through incentivisation of academic excellence; mentoring of students by ensuring pathways to leading edge jobs; promoting centres of excellence in cutting edge areas; retaining the brightest which requires challenging them; and implementing the outcomes. In an increasingly globalised economy, where *Vasudhaiva Kutumbakam* is our core belief, being adaptable and attuned to cultural differences – both within our country and abroad – will be an invaluable approach. To bring to India the best from globally renowned institutions while also retaining our own students, will be the way forward for the future, particularly in an online and digitalised virtual new normal of tomorrow. The employability quotient and lateral mobility coupled with skilled workforce will prove to be a demographic dividend, instead of a demographic disaster, where our youth will stay and study in India and we would open our arms to the best from abroad too, so as to make India a destination of choice for all.

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# FINANCIAL IMPLICATIONS OF NATIONAL EDUCATION POLICY–2020 COLLECTIVE RESPONSIBILITY TOWARDS INVESTING IN THE COMMON GOOD

**Mona Khare**

*Several studies and reports have proven that education remains the key to escaping poverty, while poverty remains the biggest obstacle to education in all parts of the world. The NEP–2020 reclaims its rights-based philosophy by stating that “access to quality education must be considered a basic right of every child”. India is one of the youngest countries in the world with around 40 percent of its population being children. Despite such a huge proportion of child population, merely 4 percent of the nation’s Gross Domestic Product (GDP) goes to children. Key challenges facing the country to implement the recommendations of the NEP–2020 include substantially increasing public investments in education and exploring additional sources of funding. This paper highlights the financial implications of the NEP–2020 within the child rights framework and proposes a time staggered strategy of collective investment for its effective implementation.*

## PRELUDE

The National Education Policy–2020 reclaims its rights-based philosophy by stating that “access to quality education must be considered a basic right of every child”. The Sustainable Development Goals (SDGs) (2015) have integrated as many as 44 child-related indicators throughout the 17 SDGs under different goals on education, health, hunger, sanitation, poverty, reducing inequality, and justice for children. Several studies and reports have proven that education remains the key to escaping poverty, while poverty remains the biggest obstacle to education in all parts of the world. The vicious cycle between poor education and

low income is well evidenced in literature. It has been empirically established that Universal secondary education could bring down global poverty to more than half the current number (*Filmer, 2008; World Bank, 2009; Loeb and Eide 2004; United Republic of Tanzania National Bureau of Statistics, Dar es Salaam: 2009*). A UNESCO report too confirmed that if all children completed primary and secondary school, more than 420 million people could lift themselves out of poverty, thereby reducing the number of poor people worldwide by more than half. It further states, “*A quality education provides knowledge, skills and self confidence that increase children’s future productivity and wage earnings and makes them less vulnerable to risks.*” Across the world, the number of children who have never been to school are those from the poorest community. Even those who get to go to school are often found to perform below their classmates as they fall behind physically, socially, emotionally or cognitively.

Education thus becomes center stage to poverty reduction and development process. Today, both well-being and education are multidimensional cutting across health and nutrition, knowledge and skill building. The global commitment is further substantiated in the UNICEF report on Progress of Every Child in the SDG Era (2018). It states, “*The Sustainable Development Goals embody our highest aspirations for a better world – and reflect our greatest responsibility as a global community: To provide children and young people today with the services, skills, and opportunities they need tomorrow to build better futures for themselves, their families, and their societies.*” The importance of education and skill development is clearly reflective in the above statement. The newly announced NEP–2020 captures the spirit of this multidimensionality at different stages of education of children between 3 to 18 years of age. It also proposes to extend the rights-based approach to education from pre-primary till secondary education.

## **INDIA’S HISTORICAL COMMITMENT TO EDUCATION AND EXISTING CHALLENGES**

India had constitutionally committed itself way back in 1950 to ensure that “children are given opportunities and facilities to develop

in a healthy manner and in conditions of freedom and dignity.” The Directive Principles of State Policy guaranteed education to all children between 6 to 14 years of age right from 1951 but the legal sanctity to the constitutional provision was acquired only after the enactment of the Right to Education Act in 2010. The India’s commitment to international Conventions, Covenants and Actions like the Dakar Framework of Action (2000), Millennium Development Goals 2000-2015 and commitments under International Covenant of Economic Social and Cultural Rights, SDGs 2030, etc. gave force to India’s commitment to increase public investment in education.

India is one of the youngest countries in the world with around 40 percent of its population being children. Despite such a huge proportion of the child population, merely 4 percent of the nation’s gross domestic product (GDP) goes to children. Also, India’s education budget has remained stagnant at around 3.67 percent of its GDP as against a targeted 6 percent for the past several years. Over the last decade, India has prioritised education along with nutrition through centrally sponsored schemes and flagship programmes like SSA, RMSA, MDM, Samagra Shiksha Abhiyan, including teacher training, etc. in addition to various scholarship schemes. Although, a significant progress has been recorded during the Millennium Development Goals period, much remains to be done.

It is a matter of grave concern that still lakhs of children are out of school. This comes to 20 percent of them (aged 8-16) being out of school. 1 in every 5 children in India is reported to be out of school. As per the National Sample Survey Organisation’s 2017-18 household survey, the number of out-of-school children in India (6-17 years) was reported to be as high as 3.22 crore. This number is feared to go up due to increased economic insecurity of several families due to COVID-19, causing many children to leave studies. The effect is envisaged to be more adverse on the girl child (National Herald India). Also it is a hard fact that only 33 children out of every 100 children enrolled tend to complete Class XII. Data reveal that there are serious issues in retaining children in the schooling system in higher grades. The GER for Grades 6-8 was 90.9 percent, while for Grades 9-10 and 11-12 it was only

79.3 percent and 56.5 percent, respectively, indicating at high dropout rate especially after elementary level, i.e., grade 8. As per the 75<sup>th</sup> round household survey by NSSO in 2017-18, the number of out-of-school children in the age group of 6 to 17 years is 3.22 crore. The figures are more alarming when it comes to education and learning outcomes of children from various socio-economically disadvantaged communities. The survey reports in general point at the current learning crisis where a large proportion of over 5 crore students in elementary school currently have not attained foundational literacy and numeracy. Children in such huge numbers are neither able to read nor comprehend basic text and their ability to carry out basic addition and subtraction is way below average. Adequacy of resources, including sufficient budgetary investments in quality education of 333 million children (6 to 18 years), assumes greater importance under such circumstances.

## A CHALLENGING FUTURE

Key challenges facing the country to implement the recommendations of the NEP–2020 include substantially increasing public investments in education and exploring additional sources of funding. The challenges are diverse and deep rooted. With dwindling public resources, strained fiscal capacity, existence of complicated Centre-State financial relations coupled with a massifying education sector, India has not been able to meet the 6 percent of GDP to education target so far. Rising aspirations for quality education and new demands placed on the education sector in terms of creating the required knowledge and skilled human resource for the labour market is further intensifying the funding needs.

The economic recession set in due to the COVID-19 pandemic is also going to significantly affect the volume of public expenditure on education in the coming years. As per the credit rating agency Fitch Ratings, the projected GDP growth rate will be adverse (around -10.5 percent) in the fiscal year 2020-21, which may rebound to 11 percent in the fiscal year 2021-22, and 6 percent in 2022-23. If we

assume that these three-year annual average growth rates continue for subsequent periods till 2035, then the education expenditure is bound to get adversely affected.

Also, the government's tax receipts may decline because of the predicted economic slowdown having its own toll on the already low tax-GDP ratio. The changing tax-GDP ratio due to the pandemic is likely to limit the state's potential to invest in education. This puts a serious question mark on reaching the oft repeated public expenditure target of 6 percent of GDP: will it be able to cover the targets of universalisation of school education and 50 percent GER in higher education by 2035 along with the fulfilment of long awaited target of quality education for all? Earlier studies too projected an increase in the share of expenditure on education to GDP beyond 6 percent to meet the targets of education for all, commensurate with the international standards in a knowledge economy, production of skilled manpower, growth and development in science and technology, etc. While Seth (1985) projected a growth in the expenditure on education up to 10 percent of GDP, Tilak (2006) estimated an expenditure requirement beyond 8–10 percent of GDP. To meet the international standards of education a very ambitious target of 25 percent share of education expenditure to GDP is estimated (*Rao, 1992*). Under the current situation of a long term dampening effect of the economic recession arising out of the pandemic, as well as the possibility of meeting the 6 percent target is all the more bleak. When the GDP in itself is projected to go down, even a 6 percent of the reduced GDP may not be enough to achieve the targets envisaged in the NEP–2020. Besides, increasing sectoral competition (i.e., among line Ministries and Departments) for accessing public resources, dwindling revenue, and declining household income (at least, in the medium term) would have significant implications for funding the education reform as envisaged in the NEP–2020. It thus becomes important to identify critical areas that require immediate attention and devolve a staggered strategy of priority funding over a period of time, collectively by multiple agencies.

## NATIONAL EDUCATION POLICY (NEP) 2020: MAJOR HIGHLIGHTS

The recently announced NEP–2020 is deemed to be a landmark policy for not just being announced after a gap of 35 long years but because it aims at more holistic and multi-faceted development of students through the integration of knowledge and skill development in the schooling process. Going by India’s commitment to the SDGs the focus is now on increased learning and skill building – both cognitive as well as non-cognitive. The former emphasises vocational skills, i.e., skills to work with hands and the latter emphasises on attitudinal and aptitude building skills with an aim to enhance creativity, sensitivity, innovation, honesty, discipline, etc. as well as ‘life skills such as communication, cooperation, teamwork, and resilience’ (*NEP–2020*). Among the fundamental principles enshrined in the NEP–2020, the following may deserve specific mention. To quote a few: recognising, identifying, and fostering the unique capabilities of each student, by sensitising teachers as well as parents to promote each student’s holistic development in both academic and non-academic spheres; according the highest priority to achieving Foundational Literacy and Numeracy by all students by Grade 3; multi-disciplinarity and a holistic education with emphasis on conceptual understanding creativity and critical thinking ethics and human & constitutional values extensive use of technology: to reach the unreached and adopting multiple platforms for teaching and learning respect for diversity and local context: by bringing in the local language, local art and craft as compulsory elements of schooling.

In this light, the NEP–2020 expands its coverage to formally bring pre-school age children within its fold by making ECCE a part of education sector. Thus, holding itself accountable for children from 3 to 18 years of age the curricular and pedagogical structure has been restructured from the earlier 10+2 to 5+3+3+4. The new structure corresponds to ages 3-8, 8-11, 11-14, and 14-18 years. Now, with a strong base of Early Childhood Care and Education (ECCE), children from age 3 are also included in formal schooling compulsorily, aiming to promote ‘better overall learning,

development, and well-being’ (*NEP–2020*). Thus, the education sector now covers the age cohort of 3-18 years of age as against 6 to 18 years of age, previously.

## NEP AIMS AND TARGETS WITHIN THE SDPP FRAMEWORK

The NEP–2020 also draws extensively from the UNCRC’s four broad pillars of Child Rights: Survival, Development, Protection, and Participation (SDPP) in the context of education. The global education development agenda reflected in Goal 4 (SDG4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 seeks to ‘ensure inclusive and equitable quality education and promote lifelong learning opportunities for all’ by 2030. These principles are clearly embodied in the NEP–2020 Pillars of 4 Es, i.e., Enrolment, Equity, Excellence, and Employability. Specific targets are set towards Universal access, full equity and inclusion, quality and learning reveal the Government’s commitment to achieve the above. These can be clubbed as follows:

### *Increased Participation*

- i. Universalisation of education with the aim is to achieve 100 percent Gross Enrolment Ratio in preschool to secondary level by 2030.
- ii. Universal access to ECCE ensuring that every child prior to the age of 5 will attend a ‘Preparatory Class’ or ‘*Balavatika*’ (i.e. before Class 1). These children will be entrusted to an ECCE-qualified teacher and undergo primarily play-based learning.
- iii. Bring 2 crore out-of-school children back into the mainstream through universalisation of access and expanding the open schooling system. State Open Schools to be expanded and strengthened in addition to NIOS.
- iv. Targeting inclusion of children from Socio Economically Disadvantageous Groups (SEDGs) and Children With Special Needs (CWSN) by creating awareness, providing an inclusive



school environment, etc. With specific emphasis on special education, the policy highlights that there is an urgent need for additional special educators with specialist requirements including subject teaching for children with disabilities (*Divyang* children) more particularly at the Middle and Secondary school levels.

### ***Increased Survival***

The policy aims at curtailing dropout and repetition rates as well as at providing a safe, enriched learning environment for all children in schools via:

- i. Improving school environment through better infrastructure and schooling facilities: it is not just about creating basic facilities (like hostels, transport, books, uniforms, etc. but specific ones for ECCE as well as CWSN (like ramps, wheelchairs, special aid equipment, assistive devices and appropriate technology-based tools, teaching-learning materials like braille, etc). It is also about ensuring functional toilets, safe drinking water, health, sanitation, and nutritious food.
- ii. Teacher development: Adequate number of quality teachers by filling vacancies at the earliest, especially in disadvantaged areas and areas with large pupil-to-teacher ratios or high rates of illiteracy. Training and professional development of teachers on a regular basis to enable them to deal with inclusive classrooms, new teaching pedagogy, etc.
- iii. Local language and local flavor: Teaching up to at least Grade 5 is recommended to be imparted in the mother tongue/regional language.
- iv. Providing for counsellors or well-trained social workers for children's needs and guidance in schools and continuously engaging with parents and communities to ensure that all school-age children are attending and learning in school.

### ***Better Development***

It is targeted to achieve universal foundational literacy and numeracy in primary school by 2025, and to identify stage-wise targets and goals to be achieved by 2025. Close tracking and monitoring of the progress is emphasised too via:

- i. Adopting Holistic Approach to teaching the policy recommends a more integrated education with no rigid separation between academic streams, extra-curricular, and vocational streams.
- ii. Vocational Education to be compulsorily integrated from Class 6 onwards through internships with local vocational experts: skills-integrated experiential learning, multifarious enrichment activities involving arts, quizzes, sports, and vocational crafts; and visits to places/monuments of historical, cultural, and tourist importance, cultural exchange programme so as to make children familiar with the countries rich heritage, value our culture and instill nationalism.
- iii. ‘*Bal Bhavans*’ to be established in all states as centers of art and crafts learning and special daytime boarding school.
- iv. Improved Governance to ensure that all schools follow certain minimal professional and quality standards for which states/UTs are advised to set up an independent, state-wide, body called the State School Standards Authority (SSSA). States will also be encouraged to conduct their own census-based State Assessment Survey (SAS) that is to be used only for developmental purposes.

### ***Increased Protection & Technology Support***

- i. Almost percent immunisation in schools with health cards for monitoring health and nutritional progress of children in the ECCE.
- ii. Extending the existing Mid-day meal (MDM) programme to the preparatory classes in primary schools and adding simple but energising breakfast to midday meals to children till elementary as well secondary schools.

- iii. Careful attention to safety and rights – particularly for girl children in schools – by creating good school campuses with proper boundary walls, school counsellors, efficient mechanisms for reporting and proper action against errants.
- iv. Enhanced use of digital technology in education through smart classrooms, digital boards and technology-enabled classrooms, DTH channels, and ICT infrastructure in schools from upper primary to higher secondary level

### ***Exclusive Funds and Additional Support***

In addition to expanding financial support for SEDG students through the existing means of scholarships, fee waivers, and freebies, the policy for the first time recommends funds creation of three specific nature:

- i. *Additional provisions should be made for Gifted Students/Students with Special Talents* in the area of Sports, Dance, Dramatics, Music, Yoga, Science, Maths etc. through scholarships, promotional activities, trainings etc.
- ii. A *‘Gender-Inclusion Fund’* to be constituted for equitable quality education to all girls as well as transgender students to improve their access and participation.
- iii. *‘Inclusion Fund’* schemes shall also be developed to address local/regional access issues for other SEDGs.

The Policy places the onus on the ‘State’ to implement the propositions with help from Private sector and civil society by recognising that ‘education is a public service’. It reclaims its rights-based philosophy by stating that “access to quality education must be considered a basic right of every child”. The focus is on a triple pronged approach, these being:

### **Regional Focus**

The Policy recommends special interventions for promoting the educational development in Aspirational Districts and regions of the country with large populations from educationally disadvantaged SEDGs should be declared Special Education Zones (SEZs).

## **Personal Focus on All Children**

The Policy specifically calls for monetary as well as non-monetary support and an enabling school environment for all children including the Socio-Economically Disadvantaged Groups (SEDGs). These are categorised to include children based on gender identities (particularly female and transgender individuals); socio-cultural identities (such as Scheduled Castes, Scheduled Tribes, OBCs, and minorities); geographical identities (such as students from villages, small towns, and aspirational districts); disabilities (including learning disabilities) and socio-economic conditions (such as migrant communities, low income households, children in vulnerable situations, victims of or children of victims of trafficking, orphans including child beggars in urban areas, and the urban poor); and Children With Special Needs (CWSN) or *Divyang*.

## **Technology and Teacher Focus**

The Policy envisages that each state must undertake a technology-based comprehensive teacher-requirement planning forecasting exercise and fill all vacancies with qualified teachers, including local teachers, with suitable incentives for career management and progression. Digital infrastructure in schools and wide-ranging teacher training activities are part of this endeavor.

Most importantly, the policy reiterates Government's commitment to increase public investment in education to 6 pc of GDP at the earliest. It calls for 'substantial investment in a strong, vibrant public education system'. Further, it states "the Centre and the States will work together to increase the share of public expenditure on education as a percentage of the total government expenditure from the current level of around 14 percent to 20 percent. Besides substantially raising public budgetary support for education, the policy envisages to explore opportunities for higher cost recovery without affecting the needy and deserving sections (NEP–2020, p. 61).

## FINANCIAL IMPLICATIONS OF NEP–2020: IDENTIFIED AREAS

It can easily be seen that apart from some ongoing schemes and programmes in the education sector that have been aiming majorly at access there are some new areas that have been emphasised in the NEP–2020. These include:

### ECCE

Universalisation and formalisation of ECCE entails large budgetary requirements of good infrastructure for implementing early education for the creation, upgradation, maintenance of *anganwadis* or primary school buildings, training of teachers/*anganwadi* workers in ECCE, development of books, play way methods, and teaching equipments, nutrition, and health monitoring. ECCE is also to be introduced in *Ashramshalas* in tribal-dominated areas.

### SEDGs

The Policy recommendation on expanding the scope and coverage of direct cash transfers, scholarships, free-bees (like books, uniforms, stationery, etc), promotional incentives (like cycles, laptops, etc) to children belonging to the SEDGs and in particular girls within these categories.

### Gifted and Students with Special Talents

The Policy, for the first time, categorically calls upon specific support to nurture the innate talents of individual children, encouraging them by providing them with supplementary enrichment through topic-centered and project-based clubs and circles in curricular as well as ex-curricular areas like Science Circles, Math Circles, Music & Dance Performance Circles, Chess Circles, Poetry Circles, Language Circles, Drama Circles, Debate Circles, Sports Circles, Eco-Clubs, Health & Well-being Clubs/Yoga Clubs. It also recommends organisation of high-quality national residential summer programmes for secondary school students along these lines.

## **Children with Special Needs (*Divyaang*)**

In its endeavor to make the education system more inclusive and universal, there is a special mention for creating special facilities in all schools in addition to special schools for such children with all required infrastructure, specially trained staff, and special equipment. The policy, for the first time, has also referred to take concerted efforts to include transgender children.

## **Health and Nutrition**

Extending the MDM to secondary schools, pre-primary, provision for healthy breakfast, health tracking and monitoring (including mental health) of children will add to an important component of ECB. Recognising the inter-departmental nature of this responsibility, the policy endorses joint provisioning by departments like WCD, Tribal Welfare, and Health and Family Welfare.

## **Advanced, Digital and Friendly Infrastructure Creation**

There was already a global recognition towards the integration of technology in school teaching as well as learning. The recent COVID–19 pandemic has further intensified this drive. Additional budgetary provisions are needed towards developing smart classrooms in all schools, however in a phased manner. Development of online apps with quizzes, competitions, assessments, and enrichment materials shall all entail financial implications. However, these may be shared with other departments like Science and Technology, IT, etc.

## **Child Safety and Security**

Schools should become fully equipped to provide a safe and secure environment to the children, especially girls. Provision for good school buildings, basic functional infrastructure like good quality school buildings, boundary walls, toilets, electricity, etc. to be a mandatory requirement. In addition, provision for school counselors, doctors, community workers to ensure efficient management of child safety

measures. Honorarium/remuneration to such specialised staff would entail additional expenditure.

### **Holistic, Integrated, and Skill Development**

In order to ensure curricular integration of essential subjects, skills, and capacities for children in schools, financial provisions would be needed for different types of proposed activities, particularly between classes 6 to 12th. These include fun courses; internships with local artisans/craftsmen & vocational experts; hands-on experience; and tours and travel expenses on visits so as to provide additional exposure outside the school premises by strengthening 'Bal Bhavans'.

### **Teacher Development and Special Trainings**

Continuous Professional Development of teachers through regular workshops, group activities, leadership development programmes, incentives and awards, special trainings for technology-enabled teaching, skill-oriented training and special educators, language teachers are all on the card. A key incentive for teaching in rural schools will be the provision of local housing near or on the school premises or increased housing allowances.

### **Books, Reading Material, Libraries**

The Policy categorically talks about developing high quality books and teaching material in local and regional languages. Play-way teaching material, online teaching material, and assistive teaching material for CWSN, all entail financial implications. States are required to prepare their own curricula textbooks incorporating 'state flavor'. Public and school libraries are also proposed to be significantly expanded along with digital libraries.

## **CREATION/EXPANSION OF STATE LEVEL GOVERNING BODIES**

The Policy encapsulates many state level bodies in conjunction with existing/new national level bodies for standard setting and quality

monitoring. For examination, standard setting and curriculum development, states/UTs will set up an independent, state-wide, body called the State School Standards Authority (SSSA) and conduct their own State Assessment Survey (SAS).

Several of the above identified areas require devoted attention as they were not getting any substantive allocation in earlier times or are newly mandated in the NEP–2020. While there has been considerable improvement in the availability of basic physical infrastructure like toilets, drinking water or classroom facilities especially at the elementary level, the facilities are still lacking computers (20.7 percent) boundary wall (56.5 percent), playgrounds (69.3 percent), electricity connection (67.4 percent), ramps (74.2 percent), etc. These are extremely important for the kind of holistic education and safety norms that the NEP–2020 envisages. The situation is far worse for facilities like kitchen gardens (21.5 percent), rainwater harvesting structures (13.9 percent), incinerator facilities (14.8 percent), and water-testing (23.6 percent) (Economic Survey 2020-21), all of which may be considered highly desirable in the light of the environmental sustainability drive, greener, cleaner and healthier schools. Children in the newly added 3-6 years of ECCE category attending school is still very low at 33.1 percent for the country vis-à-vis 95 percent of the elementary school category (6-13 years of age).

Also, it is not to be forgotten that even when the country as a whole may be performing well on certain indicators of education development, there exist wide ranging inter-state and inter-district disparities. As such, the poor performing districts need focused allocations to be made in specific areas.

## COLLECTIVE RESPONSIBILITY

The Policy places the onus on the ‘State’ to implement the propositions with help from the private sector and civil society by recognising that “education is a public service”. This is the time to accept the fact that education is now being globally embraced as a ‘common good’. Thus, investing collectively in education becomes



the responsibility of all stakeholders. When the world is today more interconnected and economies more knowledge-based, an educated and skilled global society becomes imperative for inclusive and sustainable development. International organisations like UNESCO are thus promoting the idea of considering education to be considered as a global common good and funding and financing of education to be participatory in nature (*UNESCO 2015, 2016; Audrey 2020*). Already, multiple and innovative ways of funding are emerging on the scene. In order to reduce the dependence on the household sector and students, institutions and governments are exploring and promoting the participation of other stakeholders through new ways of cooperative funding like Public Private Partnerships (PPP); industry funding under Corporate Social Responsibility (CSR); Education bonds and shares; government initiated and supported Edubanks<sup>i</sup> (Nigerian Education Bank Act 1993 (*Ishengoma, 2017*)); Joint Funding Companies (Higher Education Financing Agency HEFA<sup>ii</sup> in India); associations and civil society contributions/gifts/endowments; potential graduate employers/alumni; and external donors in partnering mode (*Khare, 2020*).

Thus, while they have the capacity to supplement and augment government resources, there is no question of replacing them. In fact, both state and global commitments are towards 6 percent of the GDP to be invested in education and international aid to be directed towards more vulnerable regions. Communities gain even greater relevance with the COVID–19 pandemic, bringing to the fore stark inequalities existing in both access and acquisition of education across the globe. It has been reported that 1.5 billion students – that comes to 90 percent of the global school-age population – suffered due to school and university closures during the pandemic (*UNESCO*), the most affected ones are from vulnerable sections of the population, underprivileged groups, people with special needs, street children, refugees, and displaced persons. Even when the education sector in its attempt to keep its activities ongoing shifted to online/distance mode of teaching, the inequalities existing in access to e-technology came out as one of the stark realities putting these vulnerable sections into a greater exclusion. It is only 57 percent learners in the world who have internet access at home. This figure

is a mere 18 percent in sub-Saharan Africa. It is also estimated that resources available for education are likely to drop by more than \$210 due to the global economic shock. These are the estimates on the assumption that countries will continue to maintain their current levels of public investment in education. With countries facing a severe economic crisis and drop in growth rates, such an assumption is highly unrealistic. As per ILO (2020), disruptions to education and training caused by COVID-19 will have profound additional impacts on young people's employability and employment which are likely to last for long collective action and participatory engagement in increasing investment in education thus becomes even all the more important for national governments. Time is ripe to make this paradigm shift in the political economy from competitive funding in education to collective funding of education.

## CONCLUSION AND RECOMMENDATIONS

Within its visionary framework of holistic and inclusive education, the NEP–2020 entails specific provisions for wide ranging fundamental and advanced needs of a futuristic quality education system. The purpose is to ensure adequate:

1. Human resources
2. Physical resources
3. Digital resources

It goes without saying that the need to enhance the education budget in order to meet the targets specified by the NEP–2020, is more than ever before. Also, the economic crisis emerging out of the current pandemic will create a tough situation to meet all the enhanced financial requirements and require a collective effort on a proactive basis by all stakeholders. Given the budgetary limitations, a 3-point formula may be adopted to focus on:

*More vulnerable groups:* OOSC, transgender, CWSN (*Divyaang*), SEDGs

*More vulnerable regions:* Aspirational and SEZs

*More vulnerable facilities/activities:* Skill-based vocational curricular integration, digitisation and teacher development

A few Innovative ways to address these through limited resources are suggested. The state may consider creating four types of special funds. These being:

### ***Horizontal Equalisation Funds***

In order to reduce inter-district disparities, prioritising the investment needs in a decentralised manner in special education zones is essential.

### ***Special Inclusion Funds***

These funds need to be incorporated for various groups of children that require special attention and those that require incentives to nurture their innate talents by way of direct cash support, and indirect kind support, and enabling environment support. These would include additional financial requirements to meet the ECCE targets.

### ***Technology Integration Funds***

Recent reports point at (National Sample Survey Office's (NSSO's) 75th round on Social Consumption Education 2017-18) glaring digital divide among school children in Karnataka. A mere 6 percent of total school-aged children from class I to XII have been reported to have access to computers. This figure comes down to 4.6 percent for students' access to internet facility. The rural-urban divide, too, is more than 11 percent . In the light of the increasing need for technology-enabled education that became all the more evident during the recent pandemic and has been rightly promoted by NEP 2020, concerted efforts to enhance the use of digital means for sustained, uninterrupted, equitable, quality education in general and in particular for the relatively disadvantaged groups is the need of the hour.

### *Performance-based Incentivisation Funds*

As suggested by the 15th Finance Commission to introduce financial incentives for best performing states on the basis of Performance Grading Index# on select education outcome indicators the purpose is to incentivise states for incremental change in these indicators against the targets set by individual states. It is thus suggested that the Government of Karnataka may take up a similar exercise at the district level in order to reward performance and also avail incentives from Union Government from 2021-22 onwards. The incentive funds may be used to support poorer/non-performing districts for incremental change.

The approach should be to not just stagger the priorities over time but across the major supplementary sources of public expenditure in a decentralised fashion with districts as units. Thus, areas requiring immediate attention may be put under the funding priority of the government; those that have a direct bearing on the private sector and corporate bodies may be put under partnership funding mode; and those that can be shifted for a later period may be put under staggered funding mode. The Policy recognises the need for collective investment in quality education as 'common good' but the need of the hour is to provide enabling legal and administrative infrastructure to major stakeholders to become proactive in investing in education.

### NOTES

1. Article 246 in the Seventh Schedule of the Constitution of India (1950) provides three lists: Union List, State List and Concurrent List which are under the joint jurisdiction of the Centre and State. After the 42nd constitutional amendment, although education was transferred to the concurrent list, the state government continues to bear higher expenditure responsibilities.

\* Samagra Shiksha Abhiyan that was launched in 2018 as an Integrated Scheme for School Education programme, The erstwhile 2 major CCS stand merged with it, i.e., Sarva Shiksha

Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE).

***#Quality outcome parameters for performance monitoring in education for the award period of FC-XV (percent)***

- 1 Average language score in Class 3 - Government and aided schools 10
  - 2 Average mathematics score in Class 3 - Government and aided schools 10
  - 3 Average language score in Class 5 - Government and aided schools 10
  - 4 Average mathematics score in Class 5 - Government and aided schools 10
  - 5 Average language score in Class 8 - Government and aided schools 10
  - 6 Average mathematics score in Class 8 - Government and aided schools 10
  - 7 Difference between transition rate of boys and girls rate from upper 40 primary to secondary level
- i. EDUBANK – The Nigerian education bank of 1993 that had become defunct is now reintroduced 2016 by the Federal Government of Nigeria to provide loans for students to pursue higher education. The Bank was established to replace Nigerian Student loans Board.
  - ii. Higher Education Financing Agency (HEFA) was incorporated in India in 2017 as a registered Not-for-profit Union Govt. company and Non-deposit taking Systematically Important Non-banking financial company. It is a joint venture of the Ministry of Education (MoE) Government of India and Canara Bank (with agreed equity participation in the ratio of 90.91 percent and 09.09 percent) respectively for financing the creation of capital assets in premier educational institutions in India.

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# NATIONAL EDUCATION POLICY–2020 INNOVATION IN HIGHER EDUCATION AND QUALITY ASSURANCE

Sanjay Gupta | Suresh Garg

*The National Education Policy (NEP–2020) has been hailed as a policy document with infinite transformational potential due to the profundity of its recommendations. In education, innovation lies in continuous march towards excellence and devising improvement in pedagogy and teaching-learning processes for improving a learner’s progression curve. Therefore, all stakeholders of the university fraternity would be required to be dedicated, unlearn past practices, and relearn new ones through Continuous Professional Development programmes conducted by experts. The NEP–2020 has devoted a lot of space to address challenges of nationalism innovation, qualities, etc. This essay is an attempt to analyse the Policy on these perspectives.*

## PRELUDE

On July 29, 2020 the Government of India took a landmark decision of accepting the National Education Policy, which seeks to provide a new dimension to Indian Higher Education System. The National Education Policy–2020 (NEP–2020) is based on the premise that only knowledge can transform our society from stagnation and poverty to dynamism and prosperity, from marginalisation and deprivation to empowerment and recognition, from ignorance and delusion to enlightenment and liberation and from conflict and intolerance to peaceful co-existence and non-violence. The Policy in particular, highlights the need to re-engineer Indian education from school level to PhD degree to face new realities and challenges for the country to emerge as an academic power. Among others, the NEP–2020 has made the following recommendations:



- Restructuring of 10+2 system of school education in favor of 5+3+3+4 pedagogical and curricular system covering ages 3-18 years.
- Creation of multidisciplinary universities and colleges by 2030 to offer education to large numbers in local/ Indian languages and minimise fragmentation of higher education.
- Revision of curriculum, pedagogy, assessment schemes, and student support services periodically to include latest developments and be at par with the best in the world.
- Creation of 100 new or out of the existing universities for world class research in front-ended fields.
- Minimisation of external influences and observance of transparency while appointing enlightened individuals with pragmatic vision as institutional leaders.
- Implementation of merit-based faculty appointments and nurturing talent by practicing career progression based on teaching, research, and service rather than “connections” (author’s emphasis).
- “Light but tight” regulation, phasing out the system of ‘affiliation’ over a period of fifteen years and grant of performance based graded autonomy.
- Promote blended learning and technology to be the important intermediary of teaching-learning.

The National Education Policy (NEP–2020) is in place after 34 years as an outcome of country-wide discussions for more than four years by leading academics in our universities. It has been hailed as a policy document with infinite transformational potential due to the profundity of its recommendations, such as creation of research universities; use of technology to enhance access to quality education; single regulator for “light but tight” regulation of Higher Education (HE); vocationalisation of education to promote entrepreneurship and creativity; and creation of large multidisciplinary institutions. It

is well recognised now that education is an organic entity that evolves to meet emerging societal needs and a resource that augments itself. Moreover, one innovates in necessity and adversity. With faith in this expression, the NEP–2020 puts faith in the capabilities of our researchers and academia to contribute to the global knowledge pool, win international acclaim, and put India in the front row of academic powers.

The NEP–2020 has devoted a lot of space to address the challenges of nationalism. It “envisions an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower” (p.6, *Introduction*). The Policy further recommends that “the curriculum and pedagogy of our institutions must develop among the students a deep sense of respect towards the Fundamental Duties and Constitutional values, national bonding and a conscious awareness of one’s roles and responsibilities in a changing world...” (p.6). It believes in the dictum that pygmies do not build pyramids.

Making reference to SDG4, which seeks to “ensure inclusive and equitable quality education for all” by 2030 (p.3), it balances out the non-equilibrium between wisdom and knowledge, and arrest growing dehumanisation of soul, NEP–2020 also emphasizes value-based education for the development of humanistic, ethical, cultural, Constitutional and universal human values of truth (*satya*), righteous conduct (*dharma*), peace (*shanti*), love (*prem*), nonviolence (*ahimsa*), scientific temper, citizenship (national and global) values, and life-skills (Section 11). It is extremely important for us as a nation to create sensitivity towards gender issues, non-violence, religious tolerance and the poor, among others so as to seek enjoyment in sharing and giving. The Education Commission (*GoI, 1966*) provided a lot of space on how educational institutions could go about inculcation of such values but unfortunately not much was done by HE institutions to implement its suggestions.

On the other hand, it is also argued that “NEP–2020 has not made a detailed analysis of the maladies faced by the HE sector. Some of

these include ‘underperformance syndrome’, non-inculcation of 21st Century skills in learners, and due emphasis on examination-centric education which promotes rote learning and lack of ‘teachers and researchers by choice’ (Garg and Panda, 2019). Some intellectuals argue that the Policy should have considered why some recommendations made by earlier commissions (GoI, 1966; GoI, 1986, NKC, 2009) could not be implemented and suggested a way forward. Moreover, implementation of the wide ranging recommendations of NEP–2020 is bound to pose serious resource and technological challenges in an economy shattered by COVID-19 and for a country of the size and diversity of India, though the policy has reposed immense faith in the creativity of teachers and student entrepreneurs. Optimistically speaking, it should be hoped that NEP–2020 will pave way for massification and Indianisation of education, though there are loud voices on both sides of the divide.

## NEP–2020 AND INNOVATION

Innovation is the successful implementation of creative ideas within an organisation or system. From this perspective, creativity of an individual is the starting point for innovation. Management Guru Peter Drucker referred to innovation as a change that creates a new dimension of performance. Steve Jobs argued that innovation differentiated a leader from the laggard. But conventional understanding about innovation is commercialisation of invention, which refers to new concepts or products that derive from individual’s ideas or from scientific research. To be called an innovation, an idea must be replicable, economic and respond to a specific need. Innovation involves deliberate application of information, imagination and initiative in deriving greater or different value from resources, and encompasses all processes by which new ideas are generated and converted into useful products. In short, an action can be identified as innovation if it is new and useful to the system, increases efficiency, is cost-effective and compatible with or adaptable by other similar systems.

In education, innovation lies in continuous march towards excellence and devising improvement in pedagogy and teaching-learning processes for improving learner's progression curve. In short, innovation is successful implementation of creative ideas for affirmative change in the lives of the people. In the context of higher education, innovation implies systemic improvement in processes of teaching-learning, learner support and knowledge management to conserve national heritage and value systems. National Education Policy seeks to:

- use innovative teaching-learning strategies to universalise access to education and achieve 50 percent GER in HE by 2030;
- integrate all streams, including professional and vocational education, leading to emergence of one coherent HE ecosystem and accord them parity of esteem;
- technology to be the major intermediary for transaction of education to enhance access equity and inclusion of all sections of society living in isolation for centuries due to gender, location and religion;
- promote online and digital education to reach the last mile in a stratified society and innovatively use OERs and MOOCs courses and materials to save resources (financial, human, and physical);
- parity of all educational systems, practice credit exemption and promote learner mobility; and
- design credit-based flexible and innovative curricula in conventional as well as contemporary subjects of the study. For instance, environment education could include study of climate change, pollution control, waste management, biological diversity, and sustainable development and living, among other topics.

## NEP–2020 AND QUALITY

Quality in common parlance refers to “degree of excellence” of a product. It is one of the most important issues in present-day higher education ecosystem in the country. In the past, it was masked by our overdrive for enhancing access and providing equitable opportunities to HE to all. The perceptions of leading educators about quality vary considerably: some consider it as fitness of purpose and conformance to standards while others look at it as value for money, relevance to world of work and perfection, and consistency in performance (*Ahmed and Garg, 2015*). We believe that quality is a continuing march toward excellence, transparently for a social cause. Assessment of quality deficit and devising ways to improve quality at various stages necessary for improving the outcomes defines quality control.

Quality assurance aims to identify and address gaps which affect learner performance adversely and hinder realisation of institutional vision and mission as also self-actualisation of learners. Quality assurance comprises evaluation of policies and procedures for their efficiency, applicability, suitability and efficacy so as to guide the institution and each stakeholder. Through quality assurance, we intend to ensure that prescribed quality specifications and standards are maintained in each activity chain and try to raise the bar gradually. In the context of HE, NEP views quality assurance as an instrument for:

- review of offerings to reflect on pedagogy, improve procedures for continuous (formative) and term-end (summative) evaluation for satisfactory learner progression and reposition these to include skills needed to be globally competitive;
- cultivation of a culture of ownership of the institution by every stakeholder in the system;
- development of well-rounded individuals through paradigm shift towards value-based education; and
- incremental improvement in institutional performance standards through the continuous professional

development of all categories of employees and academics at all levels.

The Policy's vision for quality assurance also includes:

- grant of graded autonomy, with accountability, to an institution, its leader as well as teachers and office staff since creativity blooms with the fragrance of academic freedom;
- improvement in institutional leadership by minimizing external influences and appointing enlightened deserving individuals with pragmatic vision and impeccable integrity; and
- creation of self-reliant (*Atamnirbhar*) institutions by making (interactive) learning materials accessible and available to all learners, as such some of the recommendations of NEP–2020 are highly cost-intensive.

Moreover, all stakeholders of university fraternity would be required to be dedicated, unlearn past practices, and relearn new ones through Continuous Professional Development programmes conducted by experts. Therefore, it would be advisable that the efforts on finding ways for addressing quality concerns are driven by the wisdom of practitioners and based on solid research evidence.

COVID-19 pandemic has made it amply clear that 'disruptive innovations' and collaborative partnerships are inevitable for quality assurance in every field of human endeavor, including education, research and training. The private institutions, which have been largely responsible for expansion of professional higher education in India since 1991, and had marked the beginning of liberalisation era, cater to about 80 percent learners in professional programmes. Unlike leading foreign universities like Cambridge, Harvard, Oxford, and Stanford, Indian private universities, but for a few, tend to be small in size and scope, with little emphasis on R&D. These are invariably guided by "for-profit" rather than for philanthropic considerations (though justifiable returns would be in order to sustain further growth). This is a catch-22 situation: government regulators tend

to control rather than facilitate development and private providers like ambiguity (*Kulandai Swamy, 2006*). The National Education Policy accords parity of esteem to all types of HE providers by recommending acceptability and credibility for the qualifications conferred or certifications made by them.

It is now well documented that Indian Higher Education is producing unemployable graduates who pass their examinations without being deep learners. They are not trained to develop the intellectual creativity needed for problem solving, independent thinking, asking probing questions and digital skills suited to 21st Century (*Das et al, 2019*). Moreover, conventional teachers have traditionally refrained from using technology in curricular transactions either due to their ignorance about its capabilities for value addition or because they view it as an agent that would marginalise their role and adversely affect their importance (*Panda and Garg, 2019*). However, such impressions are misplaced; technology enhances the reach of the word of mouth as also the effectiveness of a teacher in spatial as well as temporal dimensions (*Garg, 2015*.) It also facilitates interaction in a number of ways, and it would be no exaggeration to remark that growth in education and technological developments have direct correlation with the growth in education. It is despite the fact that technology could not replace, simulate or even imitate ‘the teacher’ in the classroom truly and completely. But the point that needs to be made here is that technology improves quality by creating a rich learning environment for individualised instruction and unleash the entrepreneurial energy of our youth.

In so far as the availability of technology for education is concerned, India has kept pace with developments and applications of ICTs for education and training. But the major problem has been that all these ICTs and related pedagogies/andragogies of teaching-learning have remained at the periphery, sporadically used as supplementary, and have operated in a context where there is a lack of a holistic and innovative use for teaching-learning. The government-initiated reformative schemes such as choice-based credit system (CBCS), BVoc degrees, Deen Dayal Upadhyay Skill Centers and UGC

Regulation 2016 for SWAYAM are bound to improve the quality of education for learners living in isolated and far-flung areas. Parallely, there have also been developments in technologies and networks to support quality teaching-learning in the information highway (*Ahmed and Garg, 2015*).

## ASSESSMENT, ACCREDITATION AND QUALITY

Experience shows that quality enhancement is facilitated by unbiased assessment and accreditation of an institution without preconceived ideas. Assessment and accreditation are viewed as complementary to quality, innovation, and autonomy by some practitioners, while these are considered voluntary and self-regulatory by many educationists (*Garg and Kaushik, 2020*). Assessment is essentially evaluation of institutional vision, mission, core values, objectives, plans, input processes, infrastructure, and outcomes by an external agency based on certain pre-decided performance indicators with the sole purpose of improving it further. It gives an idea of the quality of the outcomes. But evaluation of quality of these aspects to qualify an institution for some status or recognition is known as *accreditation* (*Ahmed and Garg, 2015*). It serves mainly three purposes: (i) formulation of educational norms and institutional recognition, (ii) quality assurance and improvement in standards; and (iii) creation of awareness among stakeholders about the quality of education imparted by an institution.

The accreditation process can lead to a win-win situation for all stakeholders: learners get confidence that the programme being pursued by them and offered by their institution enjoys acceptability in the system; the public, including the employer groups, get satisfaction that the institution is conforming to certain standard of expectation; and the institution concerned gets a boost in its reputation and legitimacy. Moreover, by reengineering its offerings strategically with appropriate inbuilt checks and balances, an institution can boast of being trending. Also, accreditation process generates healthy competition with other institutions (*Das et al., 2019*).



The purpose of quality in India would be served better only if knowledgeable and reputed professors are associated in assessment and accreditation exercise because only they would be equipped with appropriate skills to guide and suggest ways for improvement. (Experience shows that those with natural tendency to bend forward find access to corridors of power and do little to justify their presence.) This highlights the need to take holistic view while framing guidelines for regulation of infrastructure, human capital, fee to be charged, and admissions, etc. so that society can get access to quality higher education at affordable cost.

It is a well-accepted fact that certain institutions of higher education enjoy definite preferences of students, parents, and employers. In India, the IITs and IIMs are institutions of choice in higher education. Of late, the process of accreditation by NAAC has undergone gradual change, so as to comply with the National Institutional Ranking Framework (NIRF) – institutional ranking by government (besides assessment and accreditation by UGC) – a decision which was an outcome of disenchantment with India's showing in the world ranking of higher education institutions.

## CONCLUSION

In knowledge era, higher education provides tools to drive economy and quality assurance is the catalyst that powers it. In order to help develop a critical mass of intellectuals and researchers who can contribute to global knowledge pool, NEP–2020 has made several path breaking recommendations to take cost-effective HE till the last mile. It highlights need for complete overhaul and re-configuring the education system by creating (i) multidisciplinary autonomous universities/colleges headed by dedicated academic leaders with impeccable integrity; (ii) about a 100 world class research universities with greater focus on quality research; (iii) modularity with multiple entry and exit points; (iv) use of technology as major intermediary for transaction of education to enhance access equity and inclusion of all; (v) promotion of online and digital education and (vi) light but tight regulation through single regulator—Higher Education Commission of India.

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# ALTERNATIVE STRATEGIES FOR FINANCING HIGHER EDUCATION INSTITUTIONS FOR REALISING NATIONAL EDUCATION POLICY-2020

R K Mishra

*The spending on higher education is too small and needs to be boosted to far higher levels to meet the NEP 2020 mandate. Successful implementation of the National Education Policy-2020 (NEP-2020), among other things, would depend on the resources to finance it. The NEP-2020 envisions a significant increase in public investment in education, going up from the current 10 percent of overall public expenditure in education to 20 percent over a 10-year period. It is the skilled manpower graduating from HEIs who matter to the country as they have to lead various sectors of the economy, polity and society. There has been a continuous decline in funds allotted to these institutions. Given this limitation, the only way to remedy the problem is to diversify the HEI resource mix. HEIs should gradually and consistently reduce their dependence on tuition fees in addition to public funding and look for funding from known non-tuition fee sources. Among the suggested sources for additional funding are: private philanthropy; competitive bidding from the proposed National Research Foundation; corporate social responsibility allocations; and contribution of alumni and local communities.*

## PRELUDE

Successful implementation of the National Education Policy-2020 (NEP-2020), among other things, would depend on the resources to finance it. The NEP-2020 has a grand vision to address each and every aspect of education. The success of this policy calls for a large additional budget allocation and anticipates it to come significantly

through public funding. Such an approach is short of pragmatism especially when the resources at the government's disposal are facing strong limitations. At 10.9 percent tax to Gross Domestic Product (GDP) ratio, the government faces significant challenges to garner resources. Being a 'soft state', it is difficult to push the tax GDP ratio any further. With the GDP shrinking currently in terms of volume due to the COVID–19 pandemic and with a modest rate of growth during the last few years, deficit financing would only create severe economic problems. The non-tax revenue does not show much promise either as the departmental and the non-departmental enterprises are not doing well financially. The Foreign Direct Investment (FDI) flows have been characterised by volatility. To add to this, education is not considered a part of the overall scheme of investment in infrastructure. Given the above, the only way to meet the Higher Education Institution (HEI) investment is to diversify the 'resource mix' for education and also inculcate market orientation.

The purpose of this paper is to discuss the extent to which HEI resource requirements could be diversified and tap the market sources to shun dependence on the public funded education scenario.

The NEP–2020 notes that higher education significantly increases the earning power of an individual and thereby adds to the GDP. The Policy document records that per year of education yields a return on investment of around 6-12 percent to individuals. This is true of higher education. Such a prospect would become a very attractive proposition for the market players to invest in higher education.

In our context, for all types of needs, the HEIs look for public funding. This is dealt with by the government through empowering them for higher fee collection. So much so that in India public universities mop up about 70-90 percent of the financial requirements through tuition fees. Tuition fees for HEIs funding abroad is in the range of 25-30 percent. This clearly brings out the need for HEIs to look to the market.

The Policy envisions a significant increase in public investment in education going up from the current 10 percent of the overall

public expenditure in education to 20 percent over a 10-year period; it advocates for 1 percent annual incremental increase till it reaches 20 percent; and it estimates that the total additional expenditure required for higher education is 5.0 percent of the current rates, and 0.4 percent for research activities. Among the suggested sources for additional funding are: private philanthropy; competitive bidding from the proposed National Research Foundation; corporate social responsibility allocations; and contribution of alumni and local communities. However, we go beyond the sources suggested by the NEP–2020 and try to build a linkage between the market and HEIs.

### **IS A 6 PERCENT OUTLAY OF GDP AN INSURMOUNTABLE CHALLENGE?**

As per the NEP, our public expenditure on education was 2.7 percent of the Gross Domestic Product (GDP) in 2017-18. The report notes that we have never attained 6 percent of GDP allocation envisaged in the 1968 Policy, despite it getting reiterated in the Policy of 1986 and reaffirmed in the 1992 Programme of Action. The corresponding figures as per the report stood at 7.5 percent for Bhutan, Zimbabwe and Sweden; 7 percent for Costa Rica and Finland; 6 percent for Kyrgyzstan, South Africa and Brazil; 5.5 percent for UK, Netherlands and Palestine; and 5 percent for Malaysia, Kenya, Mongolia, Korea & USA.

The moot question is how to bring India's level of expenditure somewhat near to these countries. One of the reasons for the shortfall is the traditional approach of the educational sector's total dependence on the Government. The other reason is that expenditure on higher education has come to be considered as 'merit good/public good' (*Docampo, 2007*). There is no denying the fact that the expenditure on education is a 'merit good/public good' but in contrast, the Indian Financial System does not place it higher in the pecking order for resource allocation to the economy. It is, therefore essential that we take a 180-degree turn and look to new financial instruments. In other words, HEIs, their regulators, and the government as the super regulators have to think of establishing connections with the financial institutions and capital markets.

We would limit our discussion to capital markets in view of their depth, width, velocity, and integration with the global systems and technology adoption. For this, HEIs may have to think afresh, reorganise themselves and their legal status. To facilitate this transition, the stock exchanges, Security and Exchange Board of India, and the Department of Financial Services, Ministry of Finance, would have to treat this new ‘animal’ a little differently. A lot of thinking has to be done at the policy level for reorganising the HEI system at its various layers. Reorganisation and continuous adaptation are the immediate needs that require attention. Immense resources would be knocking at the door, provided suitable amendments are made in the laws governing FDI, taxation regime, and investment incentives.

It is high time that resource diversification is considered as the major plank for financing higher education in India. The Resource Diversification Matrix (Table 1) would show that there is considerable scope for widening the resource base for financing higher education.

**Table-1 Resource Diversification Matrix**

	Government (Taxpayers)	Students and/or parents	Industries Services	Alumni and other philanthropists	International Cooperation
1. Direct Institutional Contribution	X				
2. Indirect contributions via Financial Assistance and Subsidized Loan	X				
3. Tuition Fees					
3.1 Degree Programs		X			
3.2 Non-Degree Programs		X	X		
4. Student Loans and Graduate Taxes					
4.1 Subsidized	X	X	X		
4.2 Unsubsidized		X			
5. Productive Activities					
5.1 Services					
5.1.1 Consulting	X		X		X
5.1.2 Research	X		X		X
5.1.3 Laboratory Tests	X		X		
5.2 Production of Goods					
5.2.1 Agricultural Products			X		
5.2.2 Industrial Products			X		
5.3 Rental of Land and Facilities			X	X	
6. Donations					
6.1 Direct			X	X	X
6.2 Indirect (lottery)				X	

*Source: D Bruce Johnstone, et. al., The Financing and Management of Higher Education: A Status Report on Worldwide Reforms, The World Bank, 1998, p 8*

In fact, Table 2 suggests the autonomy given to HEIs in some of the resource endowed countries almost two decades earlier.

**Table-2 Extent of Autonomy Experienced by Universities**

	1	2	3	4	5	6	7	8
	Own their buildings and equipment	Borrow funds	Spend budgets to achieve their objectives	Set academic structure/course content	Employ and dismiss academic staff <sup>2</sup>	Set salaries <sup>2</sup>	Decide size of student enrolment <sup>3</sup>	Decide level of tuition fees
Mexico	•	#	•	•	•	#	•	•
Netherlands	•	•	•	#	•	•	•	#
Poland	•	•	•	•	•	#	•	#
Australia	•	#	•	•	•	•	#	#
Ireland	•	#	•	•	•	#	•	#
United Kingdom	•	#	•	•	•	•	#	#
Denmark	#	•	•	#	•	#	•	#
Sweden	#	#	•	•	•	•	#	•
Norway	#	•	•	•	•	#	•	•
Finland	#	•	•	#	•	•	#	•
Austria	#	•	•	•	•	•	•	•
Korea (national public)			#	#		#	•	
Turkey				#	#		#	
Japan (national public)				#	#			

Legend: Aspects in which institutions:

• have autonomy

# have autonomy in some respects

Source: OECD Education Policy Analysis (2003)

## BONDS: A PROMISING RESOURCE FOR FINANCING HIGHER EDUCATION

Oxford University has recently revealed that it will raise £750m from its first bond issue – the biggest amount raised this way by a UK university. It is the most significant example so far of universities turning to the capital markets for investment, rather than student fees. It means borrowing to raise cash in the short-term and pay back in the long-term, with the funds often used for capital projects, such as new buildings, libraries, or overhauling facilities. Moody’s credit rating agency gave Oxford its highest AAA rating, citing its ‘extraordinary market position’. (<https://www.bbc.com/news/education-42201171>). This is only one recent example.

The suitability of bonds may be matched with the need and type of the institutions, their financial background, and their capacity to repay both the principal and the interest. There can be bullet payment bonds or clip and stitch bonds wherein the principal can be paid at the time of maturity and interest could be paid as and when it falls due.



Most of the HEIs would be well advised to enter the bond market in view of their large asset base. There is no risk to HEIs and their stakeholders here since it would only be a step in the direction of monetising the assets. There are public universities, engineering institutions, and colleges with large chunks of land. These secured bonds can provide an effective solution to these institutions as also the investor since the rate of interest to be paid by the HEIs would be lower than the bank rates and return on gilts, whereas HEIs would only mortgage their idle land and infrastructure.

This makes a case for research in estimating the funds that could be raised through the issuance of bonds. India has caught up with the US in terms of the volume of bonds issued as a percentage of GDP. In the US, this is about 18 percent, whereas in India we are already close to 16 percent. The different variants for bond financing are given in Box 1.

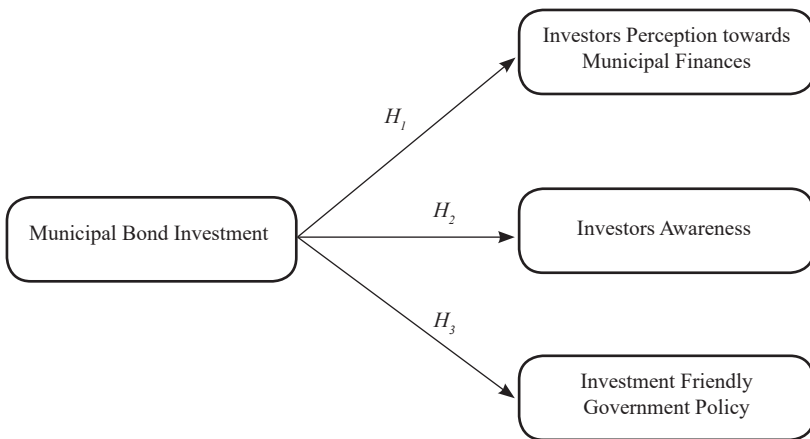
### **Box 1: Bond Variants for Higher Education Institution Financing**

#### **Bond Variants**

- General Obligation Bonds
- Revenue Bonds
- R&D Bonds
- Green Bonds
- Social Impact Bonds
- Public Benefit Bonds
- Linked Deposit Programme
- Energy Efficiency Loans
- User Fees
- Municipal Bonds

Of the bond variants mentioned in Box-1, one which has been outsmarting the others, is the municipal bonds (Volanin, 2008). Although at present this is in the nascent stage and nowhere near the US municipal bond market, it should be noted that 31 municipal corporations in India have floated such bonds raising about Rs. 3,390 crores. A good chunk of this has been invested by the municipal corporations in education. Metropolitan corporations can take a leaf out of this experience of issuing municipal bonds exclusively for investment in higher education (Figure 1). The metro cities in India would benefit with their inhabitants trained in HEIs in one or the other streams. To make municipal bonds a cash cow for HEIs, the investors’ awareness, perception, and investment friendly government policies have to be attended to.

**Fig 1: Municipal Bond Investment in HEIs**

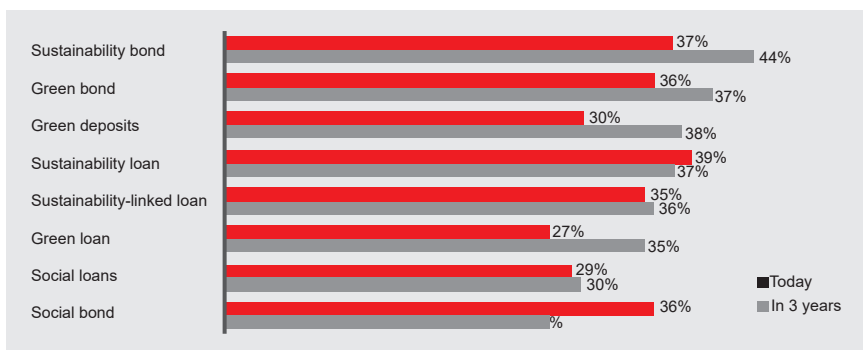


Source: RK Mishra, et al, *Municipal Bonds as an Investment Option among Indian Investors*, *South Asian Journal of Management*, Hyderabad; Volume 27: No.2 (April – June, 2020), p 148

Not all HEIs in India are oblivious of bond financing as a source for continuation, expansion, and creation of new benchmarks. XIME Bhubaneswar is an excellent example wherein a given loan was repaid just the next year as the proceeds realised from tuition fees were twice the amount of the money borrowed. Nonetheless, it is true that the HEIs have an attitude of risk aversion, not thinking out of the box, and being hell-bent on following the traditional approaches.

In fact, investments in HEIs could also be considered an investment in sustainability. This has proved to be more than true in the case of Asia Pacific countries. These countries have taken it as a part of the Environment Sustainable and Governance (ESG) challenge. With that not only have those investments made deep inroads in Asia Pacific countries but they are also seen as the ones having a promising future. Investors in Asia Pacific countries have shown a preference for investing in sustainable bonds, green bonds, green deposits, sustainability linked loans, social loans, and social bonds (Graph 1).

### Graph-1 Investors: Sustainable Finance Instruments Invested in toDate, and Planned Over the Next Three Years



Source: Intelligence Unit, *The Economist* 2020, *Financing Sustainability: Asia Pacific embraces the ESG challenge*, London, p 7

Looking to the future, we may expect the global investors to focus their attention on sustainability bonds. Hong Kong, New Zealand, Singapore, and Australia are leading in this aspect, followed by Japan.

India stands next to China in Foreign Direct Investment (FDI). We could become a more attractive destination by floating projects for financing HEIs. This would require cultivating the requisite financial skills, new managerial culture, and a determination to expand in size, as size matters ultimately.

## EQUITY INVESTMENTS AND PUBLIC PRIVATE PARTNERSHIPS

Equity investments open a new door for HEI financing. There are enough cases of equity financing by global business schools in other countries. Equity investments can take care of infrastructure needs and campus development; such investments could ensure a high rate of return to investors. Some private universities in India have come up with this way; even public universities could consider this option.

### Public Private Partnerships

Public Private Partnerships (PPP) is yet another channel wherein the funds could flow from reverse sides. The management of these HEIs could also be on the same pattern. This is a bit different from the normally defined PPP approach, and has taken deep roots in OECD and European Union countries.

### Tapping Industry for Financing Higher Education

Industry associations could be a potential instrument for HEI financing. Harvard and Stanford Business Schools, for instance, have endowments with a treasure chest of \$3.3 billion and \$ 1.4 billion, respectively. In India, the appreciation for this is on increase. Mahindra University at Hyderabad is a case in point.

### Patents, Trademarks and Royalties

Foreign universities have been increasing their dependence on moneys received from patents and royalties. Each lab is vying with its competitors to be ahead in the race of generating new patents and trademarks. PCT provisions in TRIPS have come in handy for filing multi-country patents. Weizmann Institute in Israel, for instance, received NIS 8.5 billion (\$2.58 billion) in royalty for its IPRs in the past six years (<https://en.globes.co.il/en/article-weizmann-inst-reaps-nis-95b-pharma-royalties-in-6-years-1001214517>) Indian HEIs need to seriously think about the potential of this source for financing.

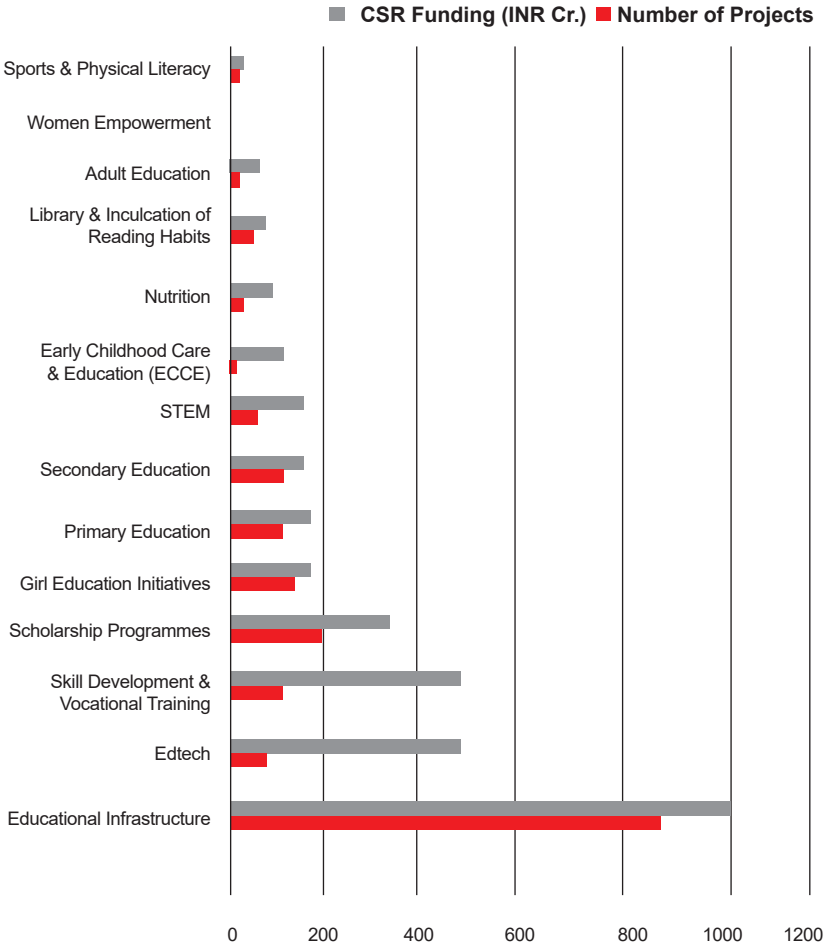
## **CORPORATE SOCIAL RESPONSIBILITY: AN EMERGING SOURCE OF FINANCE FOR HIGHER EDUCATION**

Education enriches people's understanding of themselves and the world. It provides them with knowledge, scientific temperament and necessary life skills while leading to the holistic development of personality. It opens up multiple avenues for a meaningful and sustainable livelihood, providing opportunities to grow individually as well as contributing to the nation's growth. It is thus one of the most important social sectors which act as the edifice of our developmental landscape (*Mishra and Sarkar, 2020*).

Corporate Social Responsibility (CSR) provisions in the Companies Act 2013 as amended in 2016 make it obligatory for the listed firms to spend 2 percent of the net profits on social expenditure as detailed in Schedule VII. 'Education' tops the list of subjects given in the schedule; it leads the other subjects in terms of the expenditure. Every year, CSR spend is in the vicinity of Rs. 20,000 crore. However, during 2020-21 expenditure on health has overtaken education. The PM CARES Fund has upset the apple cart of the education sector, of course for neutralising COVID-19. The interesting point to note here is that only 8,000 companies are listed in the stock markets against the overall number of companies around 20,00,000. Many unlisted companies are highly profitable with their net worth per share being astronomically high but they escape from the provisions of the Companies Act as it applies only to the listed companies. Further, between the public and private sectors, it is the public sector which has shown greater concern for engagement in CSR.

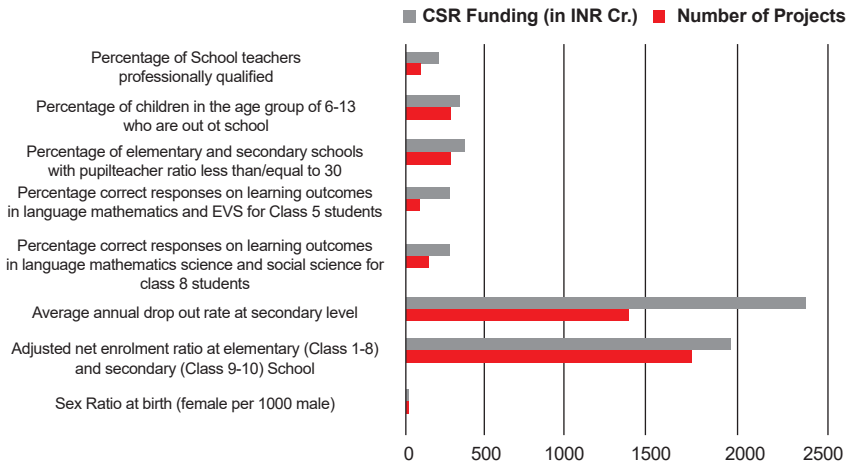
The data by CSRBOX 2020 as presented in graph 2–3 reflects an analysis of 613 companies which contributed to CSR in FY 2019 through around 8501 projects and a consolidated CSR spent of INR 12143.77 Cr. In the year 2018–19, 542 companies contributed to projects in the education domain through CSR funding of Rs. 3127 Cr. The Top 80 companies contributed about 75 percent of the total CSR contribution in the educational sector. Over 88 percent of companies have invested their CSR funds in one or more education projects. The NEP–2020 rightly recognises this as a funding source.

## Graph-2 Sub Thematic Areas of CSR Spend in Education



Source: CSR Box, April, 2020

### Graph-3 CSR – Education Spend as per SDG 4



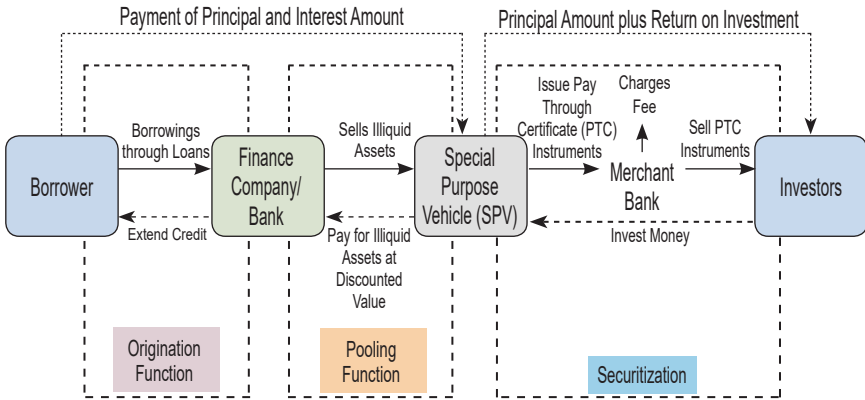
Source: CSR Box, April, 2020

## SECURITISATION

Securitisation is a technique leading to the pooling of assets and transforming them into securities. A large number of HEIs have become the ‘leviathan’ in our context. It is necessary that they rectify their sizes appropriately. Many HEIs have assets which are used only to the extent of 10 to 20 percent. Securitisation comes in very handy to convert these assets into the cash pipeline, and in turn enhance the flow of funds to HEIs.

The first step that HEIs have to take up is to prepare their register of assets and then undergo the valuation process. This could follow in acquiring understanding of the capital market operations in terms of issuance of securities. Most of the HEIs are yet to develop an understanding of securitisation process (Figure-2).

**Figure-2 Securitisation Process**



Source: Prachi M, *Securitisation*, November 25, 2019

## CONSIDERING HIGHER EDUCATION AS AN INDUSTRY

In India, there have been inconclusive debates about whether education could be considered as an industry. Education in all its aspects is no different today from any other industrial unit. Industry deals with men, material and money. These three attributes also govern education. Given this, it is difficult to make out why the banks and financial institutions shun lending to education. There are very limited number of instances when HEIs have tapped this source and that too for short and medium-term purposes.

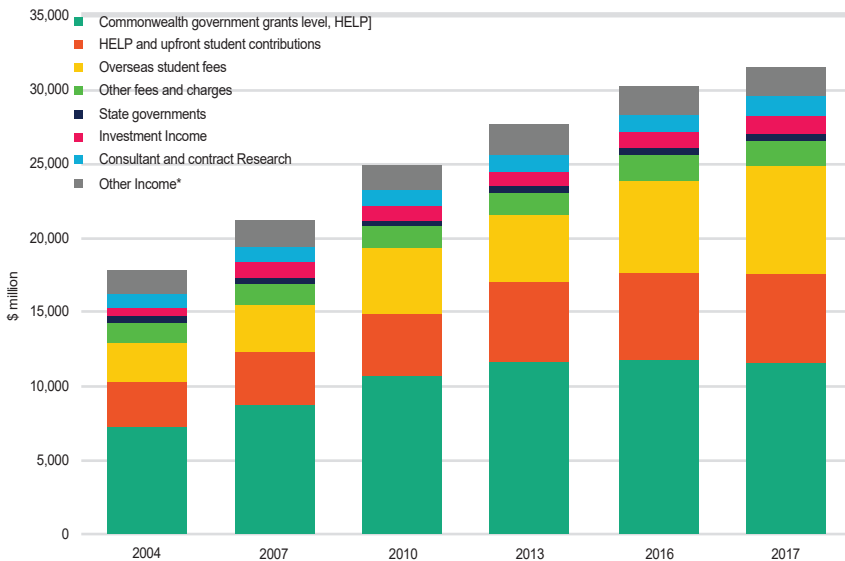
## INTERNATIONAL SCENARIO

In the European Economic Union, HEIs are allowed to raise private spruces in financing their activities. These private funds mostly come from corporations, which are matched by extra money or grants to the HEIs from the government. This got into saddle into the United Kingdom in 2011 the Higher Education Funding Council for England started the ‘matched funding scheme’. The main objective of the scheme is to highlight the importance of private



funding to the HEIs and increase their capacities and capabilities of fund raising. The private funding in HEIs has made headway in France. The HEIs could set up an ‘HEI fund’ or a partnership fund with legal personality which can include private enterprises. The Government of France gives incentives for private funding with a 60 percent tax credit or up to 20 percent of their income to enterprises. The system is known as contractualisation, which means that the relation between the state and the HEIs is regulated by four-year framework contracts. Graph-4 relating to the sources of revenue of universities in Australia shows that the proportion of other income to total income is gradually increasing, resulting in lessening the burden on the Australian government.

**Graph-4 Sources of University Revenue in Australia, in 2017 Dollars**



Source: Department of Education and Training, Financial Reports of Higher Education Providers (various years), excluding BIITE – Bachelor Institute of Indigenous Tertiary Education and VET activity for dual sector universities.

Note: Data is not available for Bond University. Other income includes royalties, trademarks and licenses and the share of net result of associates and joint ventures accounted for using the equity method.

The position of HEIs in Hungary, United Kingdom, Netherlands, and OECD average reveals the same trend as exhibited in Table-3.

**Table: 3 Position of Higher Education Institutions**

	Teaching	Other services	Research	Total	Of which	
					Public	Private
Hungary	0.6	0.1	0.2	0.9	0.9	-
United Kingdom	0.6	0.1	0.5	1.2	0.6	0.6
Netherlands	1.0	0	0.5	1.5	1.1	0.4
OECD average	1.1	0.1	0.1	1.5	1.0	0.5

### CONCLUSION

The spending on higher education is too small and needs to be boosted to far higher levels to meet the NEP–2020 mandate. It is the skilled manpower graduating from HEIs who matter to the country as they have to lead various sectors of economy, polity and society. It is worrying to note that HEIs have received relatively scant financing over the years. There is a continuous decline in funds allotted to these institutions. Noting the gravity of the situation arising out of resource crunch being faced by the Government, there is no hope that such funding would get a shot-in-arm in the near future. Given this limitation, the only way to remedy the problem is to diversify the HEI resource mix.

HEIs should gradually and consistently reduce their dependence on tuition fees in addition to public funding and look for funding from known non-tuition fees sources. In this endeavour, the Indian financial and capital market system provides an olive branch to HEIs to tap funds for spurring their organic growth. This requires HEIs to inculcate market orientation and diversify their finance mix. The government needs to include higher education in the scope of lending by financial institutions. Higher education should no more be construed as ‘public good’ as in its present form it has all the elements of a ‘general good’. The best investment that anyone can make in the present time is in oneself, since more one learns, more one earns.

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# NATIONAL EDUCATION POLICY–2020 TRANSFORMING GOVERNANCE IN HIGHER EDUCATION INSTITUTIONS

Chetan Singhai

*With an unprecedented expansion in terms of number and myriad types of higher education institutions (HEIs), Indian higher education is the third largest in the world, followed by the US and China, respectively. The expansion in higher education is impressive, but the system is exposed to unique challenges and opportunities. Institutions have been plagued by external interference at both these levels. There is a need to ensure a sound scientific framework for the governance of Universities, which will make them efficient, result-oriented and averse to politicization. To ensure the desired outcome in transforming higher education in India, there is a need to examine the efficacy of reforms in governance at the systemic and institutional levels. At the turn of the 21st century, given the impetus towards implementing the NEP–2020, the HEIs are exposed to new avenues and opportunities to transform their governance. Autonomy with accountability in HEs is the new mantra that is emanating from the NEP–2020.*

## PRELUDE

Higher Education in India (HEI), in the last six-and-a-half decades, has undergone substantial expansion both at the macro and micro levels. During this period after the post-independence, i.e., from 1950–51 to 2018–19, the number of colleges increased from 695 to 39,931. During the same period, the number of universities increased from 30 to 993 (UGC, 2019). Currently, 37.4 million students are enrolled in HEIs with a Gross Enrolment Ratio (GER) of 26.3 percent. With an unprecedented expansion in terms of number and myriad types of higher education institutions (HEIs), Indian higher

education is the third largest in the world, followed by the US and China, respectively (*Sharma & Sharma, 2015*).

The expansion in higher education is impressive, but the system is exposed to unique challenges and opportunities. The complex typology of universities with a diverse set of objectives and prioritization of their functions has enabled a system which is characterised with ‘significant islands of excellence – amidst a sea of mediocrity’ (*Altbach, 2014*). To this end, the Indian government has made a series of proclamations to make higher education a national priority in the globalised world. However, there has been a limited impact in terms of implementation. The erstwhile policies on higher education are set on three core ideas: expansion, equity, and excellence (*Agarwal, 2012*). The NEP–2020 brings together these reforms by examining the past and present to envisage an effective roadmap for higher education in India.

Further, the NEP–2020 identifies eleven challenges having an adverse influence on enabling a robust higher education ecosystem (*MHRD, 2020*). These challenges are limited teacher and institutional autonomy, suboptimal governance and leadership in most of the HEIs, and ineffective governance and leadership. To ensure the desired outcome in transforming higher education in India, there is a need to examine the efficacy of reforms in governance at the systemic and institutional levels.

Unfortunately, governance and leadership in most universities and colleges have been severely compromised. Institutions have been plagued by external interference at both these levels. Such external influence has diluted the independence and effectiveness of the institution and has often been wielded not for the good of the institution but for serving vested interests. There is a need to ensure a sound scientific framework for the governance of Universities, which will make them efficient, result-oriented, and averse to politicisation.

## DECIPHERING GOVERNANCE IN HIGHER EDUCATION AND HIGHER EDUCATION INSTITUTION

Governance is a central issue in higher education because it determines the way universities function or dysfunction and defines the relationship with the government. Governance in the higher education system is a complex interplay of the internal and external environments. It may be viewed from a complex interplay of macro and micro perspectives in the larger context in which it thrives.

The macro analysis involves issues having a bearing on the governance of universities and the roles played by the government and regulatory and statutory authorities (UGC, AICTE, BCI and similar bodies). National policy frameworks/reforms in response to challenges lay the broad framework within which macro changes could be studied. The micro-level signifies processes that deal with institutional planning; decision-making; administrative management; academic administration; institutional politics, leadership and institutional culture. The microanalysis concerns itself with more specific aspects that are internal to the university.

Governance in the university encompasses the internal and the external environments and the intersection between the inner world of the university and the larger milieu in which it exists. The internal environment is the cultural, social and organisational foundation and processes of the university and the socio-cultural profile of the agents (students, faculty, administrators and so on) and their negotiations that persists within the university set up. The external environment is the influence of the local, regional/state, market, national and international domains.

Concerns at the macro and micro levels are not mutually exclusive. Any change in the larger system of higher education affects the universities. For instance, changes in the relationship between higher education and the state could have direct implications on university governance; and such implications provide the main arena for the struggle over what these universities are or should be. The NEP–2020 envisages such a system by linking reforms at the macro level to intended outcomes and reforms at the HEIs level.

## ENCOUNTERING GOVERNANCE: INSIGHTS FROM ERSTWHILE POLICIES

Reforms in governance at the systemic and institution level have been part of the erstwhile policies. The Kothari Commission/National Policy on Education (1968) provided a roadmap for financial & curriculum autonomy for HEIs while defining the structure of the university in terms of aims, objectives and functions (*MHRD, 1968*). Further, the report of the Committee on Governance of Universities and Colleges (1969) envisaged reforms in the structure of universities and composition of and representation of various university bodies, i.e., senate/court, syndicate/executive council, academic council, etc. and the regarding the relationship of universities with affiliated colleges including conditions of affiliation, the constitution of the governing bodies, university representation.

The Gajendragadkar Committee on Governance of Universities and Colleges (1971) highlighted the fact that most of the colleges and universities are suffering from ineffective governance systems. The committee believed in a flexible pattern of organisation which is responsible for the changing needs of society as well as knowledge, can be a powerful factor in accelerating progress (*Singh, 2004*). The committee also makes cohesive recommendations on autonomy in the university and the role of the University Grants Commission (UGC). According to the committee, “the concept of university autonomy is often misunderstood. It is not a ‘legal concept’, not even a ‘constitutional concept’. It is an ethical concept and an academic concept. This concept does not question that, in a democratic society like ours, legislatures are ultimately sovereign and have a right to discuss and determine the question of policy relating to education, including higher education...the concept of university autonomy, however, means that it would be appropriate on the part of the democratic legislatures not to interfere with the administration of university life, both academic and non-academic. The universities make a claim for autonomy not as a matter of privilege, but because such autonomy is a condition precedent if the universities are to discharge their duties and obligations effectively and efficiently” (*Deasi, 1995: 673*).

The National Policy on Education (1986) underscored the importance of operational autonomy of colleges and departments, and the need for better infrastructure, more rationalised funding for research, and integration of teaching (*MHRD, 1986*). Further, the NPE-1986 highlighted the importance of decentralisation of educational administration in ensuring autonomy for educational institutions with the greater role assigned to the institutional heads. According to NPE-1986, institutional autonomy is an important aspect of the development of professionalism among teachers/faculty members.

At the onset of the liberalization era, in a report titled *Towards New Educational Management* (1990), the Gnanam Committee set out the general principles guiding the aims and objectives of the universities and, by implication, the quality of education it imparts. It said that ‘Universities are the centres of excellence as also of regional/national development’, and the students, teachers, administrators, and the society’s representatives must be involved in setting the new goals and objectives of the Universities so that universities become centre stage for excellence and national development. The management pattern of universities should be based on the principle of participation, decentralisation, autonomy, and accountability, unlike what is in vogue in the governmental or corporate system (*University Grants Commission (UGC), 1990*).

## **NATIONAL EDUCATION POLICY–2020: KEY REFORMS IN HIGHER EDUCATION GOVERNANCE**

The core objective of the NEP–2020 is to “revamp the higher education system and create world-class multidisciplinary higher education institutions across the country” (*MHRD, 2020*). To revamp the higher education system and ensure a world-class higher education system, we need to address the following issues: limited teacher and institutional autonomy, suboptimal governance and leadership, and an ineffective and disempowering regulatory system. High-quality education and research require intellectual ferment in a nurturing culture – the governance of higher education institutions determines



this culture. Our current regulatory governance mechanisms are input-centric. Because of this, all HEIs – irrespective of their type, location and objectives – are seen with the same lens.

The NEP–2020 recommends a gradual but effective shift from input-centric approach to an outcome-based approach aligned to the ‘light but tight’ approach. The ‘light but tight’ governance mechanism will be based on ensuring integrity, transparency, and resource efficiency of the educational system through audit and public disclosure while encouraging innovation and out-of-the-box ideas through autonomy, good governance, and empowerment. To overcome challenges in streamlining governance in higher education and HEIs, the NEP–2020 makes the following recommendations (*MHRD, 2020*) at the Systemic level:

***Institutional Restructuring and Consolidation to address the issues due to Complex Typology***

- ***Research-intensive universities*** to focus equally on research and teaching.
- ***Teaching-intensive Universities*** to focus primarily on high-quality teaching across disciplines and programmes.
- ***Autonomous degree-granting College (AC)*** refers to a large multidisciplinary institution of higher learning that grants undergraduate degrees and is primarily focused on undergraduate teaching.

***Setting-up the Higher Education Commission of India (HECI), with following Autonomous Verticals:***

- ***National Higher Education Regulatory Council (NHERC)*** – a single point regulatory body (Excluding Medical and Law).
- ***National Accreditation Council (NAC)*** – ensuring an emphasis on graded accreditation.
- ***Higher Education Grants Council (HEGC)*** – ensuring mechanisms for financing and scholarships.

- **General Education Council (GEC)** – frame expected learning outcomes for higher education programmes.

Following are some of the key reforms envisaged by the NEP–2020 at the HEIs level:

### ***Redefining the Idea of a University***

A university will mean a multidisciplinary institution of higher learning that offers undergraduate and graduate programmes with high-quality teaching, research, and community engagement.

### ***Institutional Governance and Leadership***

All HEIs, public and private, shall be governed by an independent Board of Governors (BoG), which shall be the apex body for the institution, with complete autonomy.

### ***Institutional Development Plans (IDPs)***

HEIs will be governed based on their IDPs. Each HEI will integrate its academic plans ranging from curricular improvement to quality of classroom transactions into its larger IDPs. The IDPs will become an important benchmark to seek grants and accreditation from respective bodies.

Recommendations towards transforming higher education and HEIs governance in the NEP–2020 is an integrated concept. The issues related to curricular, administrative, professionalism, and financial are brought together as a single entity with the necessary autonomy to create an independent and efficient governance mechanism. The impact of such an integrated approach is determined by an equally integrated implementation roadmap which shall provide substantive autonomy to HEIs based on the principle of ‘light but tight’, rather than providing piecemeal autonomy.

## **CONCLUSION**

At the turn of the 21st century, given the impetus towards implementing the NEP–2020, the HEIs are exposed to new avenues and opportunities to transform their governance. Autonomy with

accountability in HEs is the new mantra that is emanating from the NEP–2020. There is also a shift towards ‘minimum government, maximum governance’ as enunciated by the Hon’ble Prime Minister. To this end, the NEP–2020 has enabled an institutional centric governance system of the nature — ‘*of the institution, for the institution and by the institution*’. The new model redefines the relationship between the state and higher education institutions, from state control to a state supervision model.

As a result of this, the role of the current regulatory bodies will be minimal/limited; the affiliation system will gradually phase out; institutional and academic silos will be addressed; thrust towards institutional and teacher autonomy will be the order of the day; HEIs will be provided autonomy to innovate and internationalise; and overall, an era of reassuring faith on HEIs will be established. Therefore, HEIs would be compelled to enhance the quality of service and delivery while striving for cost-effectiveness and global competitiveness. However, to enable and sustain such a transformation due to changes in the external environment, there is a need to optimise and streamline the current governance and leadership in the higher education system and its institutions.

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**RESEARCH, INNOVATION AND TECHNOLOGY**



# ENERGISING RESEARCH IN INDIAN HIGHER EDUCATION INSTITUTIONS

R B Grover

*National Education Policy–2020 (NEP–2020) provides a clear direction to the Higher Education Institutions (HEIs) to nurture a culture of research in the institutions and to conduct research to solve national problems. The Policy also recommends the creation of a range of HEIs: Research-Intensive Universities, Teaching-Intensive Universities, Autonomous Degree-Granting Colleges and large Multidisciplinary Universities to facilitate Interdisciplinary Research. To create large multidisciplinary universities, the policy provides the option of setting up clusters of HEIs. This essay focusses on Research-Intensive Universities, and advocates the idea of cluster-based universities for nurturing research culture in HEIs. It proposes that the Cluster-based Universities can include laboratories established by the Government as well as industry associations and the ambience thus created will facilitate the employees of a research laboratory, faculty and research students to address problems of relevance to the nation. This will benefit the laboratories as well as HEIs; and the Nation as a whole. Success stories of national and international clusters of HEIs, particularly, Homi Bhabha National Institute (HBNI), have been discussed in detail in the essay to provide models for HEIs to emulate.*

## PRELUDE

The National Education Policy–2020 (NEP–2020), when examined from the point of view of higher education, has several excellent features including an emphasis on critical thinking, problem-solving, creativity, multidisciplinary, innovation, adaptation; and life skills such as communication, cooperation, teamwork and resilience.



Resilience is very important as fast-expanding knowledge is opening new job opportunities, and education received should equip a student with enough resilience to reskill and make use of new opportunities as they open up.

NEP–2020 is exhorting Higher Education Institutions (HEIs) to develop a skilled nation that can find robust solutions to its own problems and implement the solutions (*Para 9.1.3, NEP–2020*)<sup>1</sup> Implication of the exhortation is that research in HEIs should be conducted in areas of relevance to national development. Considering that large multidisciplinary teams are needed for solving real-life problems, and in India many elite HEIs are single-discipline institutions, NEP is proposing a move towards establishing large multidisciplinary universities and clusters of HEIs (*Para 10.2, NEP–2020*).

NEP–2020 envisions the co-existence of a range of HEIs: Research-Intensive Universities, Teaching-Intensive Universities, and Autonomous Degree-Granting Colleges. This article will focus on Research-Intensive Universities. With regard to the classification of universities, Carnegie classification is the oldest system, and in India, the publication by Jalote, et. al. (2019) is the first attempt toward a classification. HEIs have been providing detailed information to the Ministry of Education (MoE), erstwhile Ministry of Human Resource Development, as input to the National Institutional Ranking Framework (NIRF) every year, which has been analysed by Jalote, et al. (2019) for developing a classification for research universities. They conclude that very few HEIs are research-intensive and one of the reasons is the fact that most HEIs do not have a faculty that is large enough. Elaborating on the need to increase the strength of faculty, it must be noted that low faculty strength is an impediment for HEIs to take up teaching to meet requirements of - and research on problems facing defense, space, and nuclear sectors. As a result, these ministries and departments have established their own HEIs (*Grover, 2020*). This is further elaborated in the next section.

Regarding problems to be taken up for research, NEP–2020 states, “The societal challenges that India needs to address today, such

as access for all its citizens to clean drinking water and sanitation, quality education and healthcare, improved transportation, air quality, energy, and infrastructure, will require the implementation of approaches and solutions that are not only informed by top-notch science and technology but are also rooted in a deep understanding of the social sciences and humanities and the various socio-cultural and environmental dimensions of the nation,” (*NEP-2020, Para 17.4*).

From a policy perspective, NEP is providing a clear direction: direct research to solve national problems by establishing large multidisciplinary universities. To create large multidisciplinary universities, it provides the option of setting up clusters of HEIs. In India, doctoral programmes are being conducted in national laboratories in affiliation with various universities which give degrees, and while formulating implementing strategies, one can form clusters of HEIs and national laboratories. Before looking at strategies for implementation, let us have a look at some important issues related to the conduct of research in India.

### SOME OBSERVATIONS ON CONDUCTING RESEARCH IN INDIA

At the outset, let us recall an important observation from the report of the Kothari Commission issued in the mid-1960s: “At present, the ‘centre of gravity’ of Indian academic life is largely outside India. That is to say, our scholars and scientists working in fields which are internationally cultivated still tend to look outside India for judgment of their work, for intellectual models of the problems which they study, for the books they read, and for their forum of appreciation and approval..... Indian problems are not seen in their concreteness and particularity and as a result, techniques and theories are not adopted to Indian situation,” (*Kothari, 1966: 280*).

Though Kothari wrote this in 1966, the situation has not improved as may be seen from the following observation by Elkana and Klöpffer (2016:184): “The fact that hundreds of new universities in China and India copy the curricula from the United States or Europe, and send many of their doctoral students to study there, results in

a serious neglect of their own scholarly traditions as well as local and regional problems. .... Since working on such problems seldom receives proper recognition, a focus on them usually does not help in building a scholar's reputation nor is it the stepping stone for a successful career. ...Hence,...reorienting the system of incentives is the key to real change.”

On analysing the structure of research establishment in India and various policy statements (*Grover, 2019*) it was noted that while the Ministry of Education (MoE) is tasked with the mandate of nurturing higher education, other Ministries and Departments are supplementing the efforts of MoE. Various ministries and departments of the Government of India are tasked with implementing programmes falling under their mandate. To conduct research on topics of direct interest as per the mandate assigned to them, and to meet their requirements of qualified manpower, many ministries and departments have established their own institutions and are managing them rather than relying only on HEIs established and managed by MoE. The list of such HEIs prepared by the author earlier (*Grover, 2019*) has been updated and presented in table-1.

Many of these HEIs could have been a part of large universities, but the concerned Ministries or Departments found it necessary to have separate institutes that were required to focus on research and education related to their mandate. This is due to several reasons including the small size of HEIs in India, the prevailing reward system forcing scholars to look outside India for appreciation of their work and inspiration for ideas rather than the society around them, and the denial of opportunities to Indian citizens to work in strategic areas in universities abroad which is valued for recruitment as faculty in elite institutions. Additionally, there are instances, where the motivation for setting up universities by ministries and departments other than the MoE is to run academic programmes efficiently, as the decision-making process in conventional universities managed by MoE or state governments proceeds at a glacial speed. The author has discussed the motivation for establishing Homi Bhabha National Institute (HBNI), which is a cluster of HEIs including national laboratories in his earlier publication (*Grover, 2019*). In the

light of the inclusion of the concept of a cluster of HEIs, this idea needs further exploration.

**Table 1: HEIs Administered by Departments and Ministries other than Ministry of Education**

Ministry/Department	HEI (Year of establishment as an HEI)
Ministry of Home Affairs	National Forensic Sciences University*, Gandhinagar (2020) Rashtriya Raksha University*, Gandhinagar (2020)
Ministry of Railways	The National Rail and Transport Institute**, Vadodara (2018)
Ministry of Petroleum and Natural Gas (MOP&NG)	Indian Institute of Petroleum and Energy*, Visakhapatnam, (2018)
Department of Science and Technology (DST)	Indian Association for the Cultivation of Science** (2018)
Ministry of Food Processing Industries	National Institute of Food Technology Entrepreneurship and Management**, Sonipat (2012).
Ministry of Health & Family Welfare (MH&FW)	National Institute of Mental Health and Neurosciences*, Bengaluru (2012).
Department of Scientific & Industrial Research	Academy of Scientific and Innovative Research* (2011).
Ministry of Defence (MOD)	Indian National Defence University*, approved in 2010 and now coming up in Gurugram.
MOP&NG	Rajiv Gandhi Institute of Petroleum Technology*, Rae Bareli (2008).
MH&FW	Post-Graduate Institute of Medical Education and Research*, Chandigarh (2008).
Department of Space	Indian Institute of Space Science and Technology**, Trivandrum (2007)
Department of Atomic Energy (DAE)	Homi Bhabha National Institute**, Mumbai (2005).
DAE	Tata Institute of Fundamental Research**, Mumbai (2002).
Ministry of Commerce & Industry	Indian Institute of Foreign Trade** (2002).
MOD	Defence Institute of Advanced Technology**, Pune (2000).
Department of Pharmaceuticals	National Institute for Pharmaceutical Research*, Mohali (1998); and now at six more places.
Ministry of Environment, Forests & Climate Change	Forest Research Institute**, Dehradun (1991).

Ministry/Department	HEI (Year of establishment as an HEI)
Ministry of Agriculture & Farmer's Welfare: Indian Council of Agriculture Research (MA&FW-ICAR)	ICAR- National Dairy Research Institute**, Karnal (1989); ICAR- Central Institute of Fisheries Education**, Mumbai (1989). ICAR- Indian Veterinary Research Institute**, Izatnagar (1983).
DST	Sree Chitra Tirunal Institute for Medical Sciences and Technology*, Trivandrum (1980).
MH&FW	Jawaharlal Institute of Postgraduate Medical Education and Research*, Puducherry (1966).
Ministry of Statistics & Programme Implementation	Indian Statistical Institute*, Kolkata (1959)
MA&FW-ICAR	ICAR-Indian Agriculture Research Institute**, New Delhi (1958)
MH&FW	All India Institute of Medical Sciences*, New Delhi (1956) and now at six more places

\* An Institute of National Importance;

\*\* A Deemed to be University;

Notes: (a) HEIs are listed in reverse chronological order.

- (b) In the case of multi-campus institutes, the city of location of headquarter is indicated in the table.
- (c) The table doesn't list HEIs engaged in vocational education or research in fields other than STEM. These include the following.
1. Ministry of Textiles established the National Institute of Fashion Technology having 15 campuses in 1986 and it became an INI in 2006.
  2. Ministry of Shipping has set up Indian Maritime University under an Act passed in 2008.
  3. Ministry of Civil Aviation established Rajiv Gandhi National Aviation University in 2013, and all flying schools are expected to get affiliated with it. At present, it offers only short-term diploma programmes.
  4. Ministry of Commerce and Industry established Footwear Design and Development Institute having 12 campuses in 2006. It became an INI in 2017.
  5. Ministry of Commerce and Industry has set up Indian Institute of Packaging as a non-formal institute and there is a proposal to convert it into an INI.
  6. Department of Corporate Affairs has set up Indian Institute of Corporate Affairs (non-formal).
  7. Ministry of Culture has three HEIs dealing with Buddhist Studies.

## CLUSTER-BASED UNIVERSITIES IN OTHER COUNTRIES

Apart from HBNI, it is appropriate to recall examples from other countries. As stated on its website, Jet Propulsion Laboratory (JPL), Pasadena, California, USA is a federally funded research and development center managed for NASA by the California Institute of Technology (Caltech). JPL has evolved from the Guggenheim Aeronautical Laboratory established in 1936 at Caltech and was transferred to NASA in 1958. From the long history of leaders drawn from the university's faculty to joint programmes and appointments, JPL's intellectual environment and identity are profoundly shaped by its role as a part of Caltech. JPL is a large laboratory and has about 6000 full-time employees, and Caltech was placed 8th in Academic Ranking of World Universities (ARWU) by Shanghai Rankings in 2020.

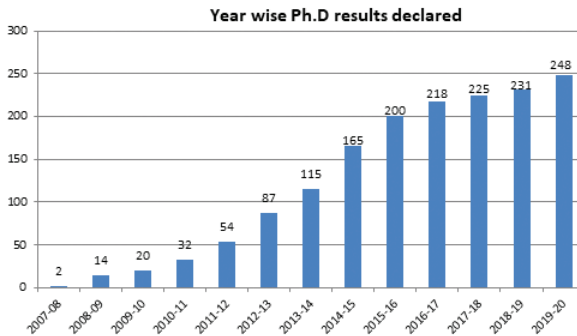
SOKENDAI (The Graduate University for Advanced Studies) established in Japan in 1988 and running only doctoral programmes, brings together several research institutions and museums such as the National Museum of Japanese History.

An arrangement similar to that between JPL and Caltech has been recently established in France. According to information in Wikipedia, the Paris-Saclay University was established in 2015 as a “university system” and became a university in 2019. In the coming years, more universities will merge with it. The university shares 275 laboratories with several research organizations, including CEA (Atomic Energy and Alternate Energies Commission), INSERM (French Institute of Health and Medical Research), SOLEIL (National Synchrotron Facility) and others. Research Centres are expected to have a profile similar to JPL which is managed by Caltech. Though just established, Paris-Saclay university was placed 14th in ARWU by Shanghai Rankings in 2020. It is one of Europe's biggest research universities and was in the making for several years (*Casassus, 2020*).

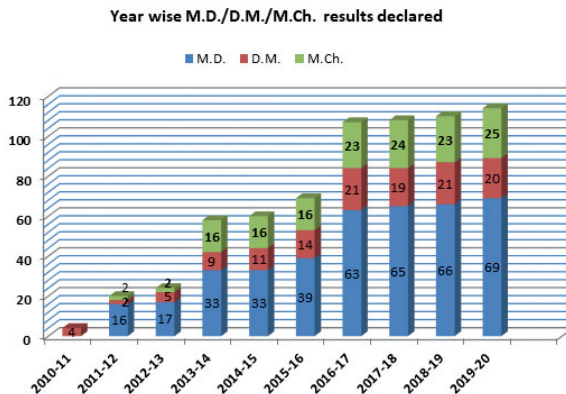
HBNI was accredited as a deemed to be university in 2005. All countries have their unique legal framework for establishing universities, and therefore, while there are differences in the structure of HBNI, SOKENDAI, Paris-Saclay University, and JPL-Caltech, the

objective for all is to benefit from synergies. Benefits of the concept where the cluster includes national laboratories can be seen from the growth and success of HBNI (Grover, 2019). Figure 1 gives a year-wise output of students with a PhD and Figure 2 gives a year-wise output of students with specialty and super-specialty medical degrees (M.D./D.M./M.Ch.) from HBNI. National Institutional Ranking Framework –2020 (NIRF–2020) ranked HBNI at 14th position among universities. Nature Index ranked HBNI at second position among all academic institutions in India based on publications during the period 1 October 2019 to 30 September 2020. Nature Index ranks universities based only on a single dimension and that is the share of articles published in 82 prestigious journals.

**Fig 1: Year-wise Output of Students with a Ph.D. from Homi Bhabha National Institute**



**Fig 2: Year-wise Output of Students with M.D./D.M./M.Ch. from Homi Bhabha National Institute**



Another example of a cluster-based university in India is the Academy of Scientific and Innovative Research (AcSIR) established as an Institute of National Importance in 2011. Nature Index has ranked AcSIR at eighth position in India.

There are more examples of collaborative arrangements between national laboratories and universities in other countries. In many cases, joint appointments are made between the collaborative entities. A notable example is the management of the Princeton Plasma Physics Laboratory by the Princeton University, and the arrangement between them provides for joint appointments.

Looking at the success of cluster-based universities, India needs to pursue this model further.

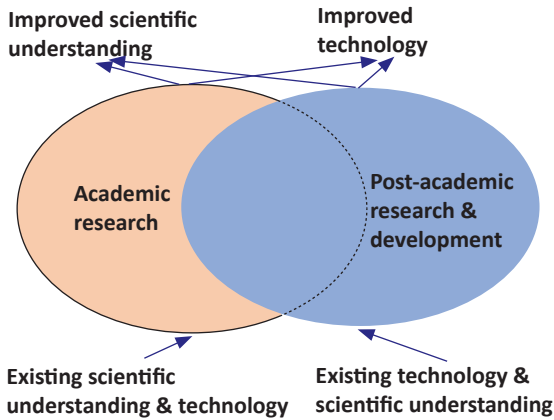
### IMPLEMENTING THE CONCEPT OF CLUSTER-BASED UNIVERSITIES

To contribute to national well-being, research must be followed by the development of technologies that is products and processes. This can also be expressed in terms of Academic Research (AR) and Post-Academic Research (PAR). AR and PAR are fully intertwined (*Grover, 2019a*). Both AR and PAR have epistemic and use objectives. The dominant objective in the case of AR is epistemic, while in the case of PAR, it is use. Using these arguments, (*Grover 2019a*) proposed a representation of the relationship between science and technology as in Figure 3. It is best to carry out the two together in the same institution to get the maximum benefit from the research infrastructure and manpower, and to ensure translation of research to national development (*Grover, 2020*). Following up AR by PAR and translating it into state-of-the-art technologies was the idea behind setting up HBNI (*Grover, 2019; Kakodkar and Gangotra, 2019:121*). Managing an institution where both AR and PAR are pursued is a challenge, but it is necessary to have such institutions to contribute to industrial progress. In this regard, life scientists, by giving due importance to translational research, have done better than scientists pursuing other natural sciences. Considering increasing funding and manpower



required to set up mega facilities to make new discoveries, it is essential that AR is followed by PAR, and a significant fraction of researchers, after completing a PhD, find employment outside the academia. It should not happen that a teacher mentors a student to get a PhD and become a teacher; if so the research becomes an epiphenomenon (*Price, 1986:157*).

**Fig 3: A Representation of the Relationship between Science and Technology**



Note: The words ‘scientific understanding’ used in the figure represents understanding in all branches of science including natural sciences, engineering sciences, health (or medical) sciences, agricultural sciences and social sciences.

As stated earlier, many laboratories also run doctoral programmes in affiliation with universities for students and their employees. For this purpose, senior researchers in laboratories are recognized as faculty or thesis supervisors by universities. One may call these programmes off-campus programmes. The Indian Institute of Science pioneered a variant of off-campus programmes called External Registration (ER) programme which enabled employees working in laboratories or industries to register for a doctoral programme under the supervision of its faculty and carry out a major part of research at their work-place. The topic of research taken up by students under the off-campus programmes is always of relevance to the work-place of the student. The ER programme is being run by the Indian Institute of Science (IISc) since 1972. Subsequently, a few more HEIs adopted this programme. Considering this practice, one can go a step further

and make work-places pursuing knowledge-based work a part of a cluster-based university. In short, experience gained in the process of establishing HBNI needs to be replicated in the country.

The concept of the cluster need not be limited to Science, Technology, Engineering and Management (STEM) fields. It can be extended to social sciences as well, like by SOKENDAI.

Off-campus programmes are not unique to India; such programmes are running in other countries as well (*Grover, 2019*). Research centers of CEA, France host doctoral students. Students pursue their entire research in CEA laboratories and get a doctoral degree from the university in which they are enrolled. At any given time, there are more than 1000 doctoral students pursuing research in CEA laboratories.

Clustering of HEIs and work-places like laboratories and museums will result in *joint programmes and joint appointments* as is the case for JPL and Caltech. This will invigorate both research and education. Institutions for clustering in a university can be selected based on different concepts; some examples could be institutes managed by a department or a ministry or a trust, institutes located in close proximity, institutes pursuing similar objectives, etc. A city like Chandigarh is a place where there are a large number of institutes and some of them could be selected for clustering into a university. For moving away from single-discipline institutions to multidisciplinary universities, clustering is a cost-effective solution and can be implemented in a short time frame.

Cluster-based universities can also include laboratories established by industry associations such as Electrical Research and Development Laboratories (ERDA), Vadodara, or motivate industry associations to set up such laboratories in HEIs. Such clustering will benefit both the laboratories and the HEIs. The ambience created will facilitate employees of a research laboratory, faculty, and research students to discuss problems and methods of solving them, through which all of them are benefitted. Research carried out by doctoral students in such laboratories will always have direct relevance to the needs of the industry. Students who have worked on contemporary problems are

likely to be in demand for employment by the industry. The concept of integrating research laboratories will be beneficial to research in all branches of engineering, and some branches of natural sciences particularly chemistry and life sciences. Such an arrangement will motivate the industry to hire post-doctoral researchers and induce young minds to start their research career by solving problems of the Indian industry. Universities can also set up incubation centers within their campus and use them to take up research as a relay race involving researchers, technologists, entrepreneurs and end-users. One can also consider extending the concept to include work-places associated with organisations like the Archeological Survey of India and various well-established museums.

Every institute has its unique culture and the initial period is almost always challenging for the management. Culture evolves over a period of time and not overnight. First, challenges have to be overcome with dialogue and mutual respect. Second, one should provide maximum autonomy to the Constituent Institutions (CIs) consistent with the legal framework. Third, a crucial issue is the fact that the scope of PAR is more than AR, and the scope of innovation is much more than PAR. In a cluster-based university, having university schools and knowledge-based work-places as its CIs, the ‘rewards system’ has to be framed to recognize all aspects of talent and all knowledge-based output. One may recall the advice given by PB Medawar to young scientists that “technicians are colleagues in a collaborative research”, and “despite their paper degrees”, young scientists have a lot to learn about scientific research (*Medawar, 1979: 39*). This advice is more important today when experimental facilities are becoming more and more complex, and need not only competent technicians, but highly competent engineers, called scientific officers in national laboratories in India, for their design, construction, operation and maintenance. Examples of such facilities are research reactors, synchrotron sources, large telescopes, tokamaks etc. Such facilities also need a well-conceived and well-run organisational structure. Contribution of all is necessary for good research output and needs due acknowledgement in the reward system designed for the career progression of employees.

## CONCLUSION

NEP-2020 is directing HEIs to conduct research to solve national problems and to achieve that objective India needs large multidisciplinary universities. NEP provides the option of setting up clusters of HEIs. Considering the preponderance of single-discipline HEIs in India and the small size of HEIs, establishing cluster-based universities has to be an important part of the strategy to implement NEP with the objective of energising research. In India, doctoral programmes are being conducted in various research and development laboratories established by the Government of India, industries, or industry associations and therefore, while formulating implementing strategy, one can form clusters of HEIs that include knowledge-based work-places which will also ensure that research conducted has relevance to problems facing the Indian industry. The concept of cluster-based universities has already been implemented in India and two examples are HBNI and AcSIR. Noteworthy examples outside India are Paris-Saclay University, and Caltech with JPL as its part.

HBNI is a success story and has the potential of being counted amongst the top universities in the world. Based on the experience of establishing HBNI which conducts its academic programmes in eleven institutions, one could say that for success, it is necessary for the management of the cluster-based university to respect the existing culture of CIs, provide autonomy to all CIs, and devise a reward system that respects all aspects of talent and all knowledge-based output.

## ACKNOWLEDGMENTS

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## Notes

1. Paras in brackets refer to paras of the National Education Policy-2020.
2. The challenge arises in devising an award system as the metric to measure the output of AR and PAR have to be different. Individuals pursuing AR seek to know, while individuals pursuing PAR seek to do, and there are

- many who pursue both simultaneously or during different phases of their career.
3. I have myself benefitted from this programme first as a student, and later as a guide jointly with faculty from the Institute, for junior colleagues in Bhabha Atomic Research Center.
  4. This is cited as an example, and ERDA has not been consulted for this purpose.
  5. On the basis of my experience of establishing and running HBNI for more than ten years, some cautionary notes are added here.

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# NATIONAL EDUCATION POLICY–2020 A SHOT IN THE ARM FOR RESEARCH & DEVELOPMENT IN INDIA

Rupamanjari Ghosh

*The new National Education Policy–2020 touches on all the issues that were being discussed in this sector for years and provides a perspective on each issue. The emphasis on quality learning has generated a lot of aspiration on the ground. The NEP–2020, in its current avatar, promises wholesale change within higher education in India by proposing multidisciplinary universities and more freedom. The importance of higher education as a key driver to accelerate invention/innovation in the long-term goal of becoming a global knowledge leader cannot be understated. Whatever measures we take to create the new education system at large, the intent and the spirit of NEP–2020 should not get lost even at every individual citizen level.*

## PRELUDE

India's new National Education Policy (NEP–2020) got Union Cabinet approval on 29 July 2020, thus replacing the last NEP that was adopted in 1986 and amended in 1992. The most powerful section of the NEP–2020 is its vision statement; it is a bold and courageous declaration, succinctly delivered through a few words: "This National Education Policy aims at building a global best education system rooted in Indian ethos, thereby transforming India into a global knowledge superpower" (NEP–2020, p. 5).

## THE STRENGTH AND THE CHALLENGE

Following this vision, the proposals outlined in the NEP–2020, prepared under the able leadership of Dr Krishnaswamy Kasturirangan

are wide-ranging and comprehensive. It touches on all the issues that were being discussed in this sector for years and provides a perspective on each issue. This is the strength of NEP–2020, and this has also led to a lot of skepticism in terms of its implementation. As always, the devil lies in the details and we need to focus on how to get the NEP–2020 translated to action on the ground – true to the spirit of the reforms envisaged – to empower the students in the country, and to discover and fully develop their unique potentials. Only by leveraging this demographic dividend, the country can dream of becoming a ‘knowledge superpower’.

We need to establish institutional mechanisms for time-bound implementation of NEP–2020 with fixed accountabilities—from resource mobilisation, legislative interventions, coordination between the centre, the states, different boards as well as regulatory bodies and funding agencies. This is a Herculean task, that the country needs and deserves—the NEP–2020 document recognises that its implementation will “require multiple initiatives and actions, which will have to be taken by multiple bodies in a synchronised and systematic manner”. The emphasis on quality learning has generated a lot of aspiration on the ground. Whatever measures we take to create the new education *system* at large, the intent and the spirit of NEP–2020 should not get lost even at every individual citizen level. “The aim must be for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of social or economic background” (NEP–2020, p. 3) and needless to say the responsibility of ensuring equitable access to quality education for the deprived sections of our society rests primarily with the central and state governments.

The proposed measures in the NEP–2020 offer a pathway towards the stated ambitious goal of transforming India into a global knowledge superpower. One needs to elaborate on one important all-encompassing thread—the identification and prioritisation of “a robust ecosystem of research” in that regard (NEP–2020, p. 44). Indeed, it is an *ecosystem* that can provide the right environment *for ideas to connect*. The change has to be brought in from the school level to undergraduate education.

## STRUCTURAL MATTERS

Changing the pattern and content of any undergraduate curriculum is an involved and serious process and needs a lot of thought and care and also some resources. Shiv Nadar University started this concept at the very beginning in 2011 with a well-rounded four-year undergraduate program (the so-called ‘FYUP’), and we already know the advantages of such a *flexible, multidisciplinary, ‘liberal studies’ and research-based* curriculum, which cannot easily be squeezed into just 3 years. Other universities can adapt from the available successful models. Curriculum changes can be implemented successfully only when all the stakeholders see merit in it; otherwise, changes stay only on paper. For a degree program, we had long recognised that it is the total course credits to be earned that matters, and *not* the duration of the program, which may not be fixed as the duration depends on each learner’s pace, preparedness, aptitude, and choice.

The multiple exit/entry options and the credit bank proposed in NEP–2020 will discourage dropouts from higher education for lack of funds or other reasons. This will also allow students from various backgrounds to complete their education while they are earning or were forced to take a break for some reason. For this to work out, the curriculum has to be *modular*. On the flip side, the teaching-learning process for these students may become more impersonal and transactional. *You gain some, you lose some!* While it is good to have this flexible option, not every student will opt for multiple exits, and the majority may still go for continuous education of 3-4 years; their experiences may not be comparable.

NEP–2020 guides us about what will enter the *menu* of UGC’s student-centric Choice Based Credit System. Real-life problems, for example, need real-life solutions that are not restricted to only one discipline. The students must have a multidisciplinary breadth, which would allow them to handle interdisciplinary areas of importance. The traditional boundaries of disciplines and education in silos have become irrelevant. But it must be emphasized that interdisciplinarity should not be at the cost of ‘disciplinarity’: students should be trained to go deep into at least one discipline. In today’s gig economy, a specialist is again in demand, and businesses are looking at specialists



to deliver data-driven results, for example. When the students go deep in one subject and learn *‘how to think’* in a research or exploration-based setting, they will be able to *re-learn* a new stream that today’s unknown future may demand of them. Students should develop the skill of *critical thinking* irrespective of the major fields they are pursuing, so that their future is bright. Universities need to expose undergraduate students to research, providing them with training in research-oriented scientific thought to address societal and industrial needs. The critical stakeholders for this are the faculty, whose role ought to be that of guidance and mentorship. It will be important for the faculty to have avenues for recharging and staying life learners.

In the NEP–2020, there is a mention of the removal of the often confusing varied nomenclatures used for Indian higher-education institutions, such as ‘deemed to be university’, ‘affiliating university’, ‘affiliating technical university’, ‘unitary university’ – these shall be replaced simply by ‘university’ on fulfilling certain norms. This is a much-needed change of nomenclature and should be applicable to the names of the prestigious Institutions of Eminence, currently being called ‘deemed to be university’. This may need amendments to the UGC Act and should be taken up at the earliest so that we can talk about the more substantive issues related to the schemes.

## **ENGAGING THE BRIGHTEST AND BEST MINDS OF OUR GENERATION**

Today in the higher education space, while it is fashionable to talk about ‘liberal arts’ on one hand, and ‘disruptive technologies’ of AI (Artificial Intelligence), ML (Machine Learning), and VR (Virtual Reality) on the other, we must remember that Liberal Arts is incomplete without physical sciences, and the disruptive technologies alone will not be able to solve all societal problems. Science has shaped our world, and today the global pandemic has reinstated the importance of basic and applied scientific research, and also of stable research infrastructure and funding, for survival and sustenance.

“HEIs will focus on research and innovation by setting up start-up incubation centres; technology development centres; centres in frontier areas of research; greater industry-academic linkages; and interdisciplinary research including humanities and social sciences research. Given the scenario of epidemics and pandemics, it is critical that HEIs take the lead to undertake research in areas of infectious diseases, epidemiology, virology, diagnostics, instrumentation, vaccinology, and other relevant areas. HEIs will develop specific hand holding mechanisms and competitions for promoting innovation among student communities. The NRF will function to help enable and support such a vibrant research and innovation culture across HEIs, research labs, and other research organizations.” (*NEP–2020, p. 38*)

Research in Basic Science has been the foundation for transformational technology. In the history of science, all technological innovations – from life-saving vaccines to space satellites – can be traced back to the work of scientists motivated purely by a desire to understand the world. One key aspect of the implementation of NEP–2020 should be outreach efforts heavily focused towards getting our young minds to understand the tremendous opportunities in the study of depths of science. What is encouraging to note is that the NEP–2020 unequivocally recognises the role of research towards alleviating the big problems of our modern world: climate change, population dynamics and management, the expansion of the digital marketplace, and the rise of machine learning and intelligence which may affect employment patterns of the future (*NEP–2020, p. 44*). Closer home, high-quality research could help find the solutions for the myriad problems that vex our country every day: access for citizens across social spheres to clean air, drinking water, adequate food, energy, quality healthcare, improved transportation, and more.

University education should drive and not just respond to industry/technology. I call for the brightest minds of our generation to engage their time and energies in social and technological developments of the physical kind and not just in improving social media or e-marketing algorithms. The vision for the future outlined in NEP–2020 resonates with the burning issues of the present time that will

greatly impact the times to come: “research has never been more essential for the economic, intellectual, societal, environmental, and technological health and progress of a nation” (*NEP–2020, p. 45*).

While we celebrate the lofty and comprehensive goals of NEP–2020, we must also be cognizant of the fact we are at a preliminary stage of the entire process; execution still remains the most important part. If we, as a nation, are serious about the goal of transforming India into a global knowledge superpower, serious research, exploration and invention must be given the due priority it so urgently requires.

### **CURRENT SCENARIO OF RESEARCH IN INDIA: STRIKING BUT ISOLATED ACHIEVEMENTS**

As a nation, we have some outstanding achievements which we can justifiably be proud of. As recently as September 2020, India jumped four places to rank among the top 50 countries in the Global Innovation Index 2020 for the first time in its history (*Times Now, 2020*). Our current rank is 48th, and the fact that we made this leap, amid the ravages of the coronavirus pandemic and the ensuing economic downturn, should not be understated. The Indian Space Research Organisation (ISRO) occupies a special place when we talk about Indian scientific innovation and temper. These are only a few examples of the immense potential the country possesses, which needs to be unlocked to truly discover our worth.

The other point to be made about the examples used above is that these successes have come despite the country’s record of historically low investments in Research & Development. According to the World Bank, India spent only 0.65percent of its GDP on research & development in 2018 (UNESCO Institute for Statistics, 2018). This percentage is the lowest when it comes to the BRICS countries as can be seen by the corresponding figures – Brazil (1.26percent in 2017), Russia (0.99percent in 2018), China (2.23percent in 2019) & South Africa (0.83percent in 2017) (UNESCO Institute for Statistics).

Would an increased investment result in better invention/innovation? For example, if we increase the R&D Spend-to-GDP

ratio from 0.7percent to 0.9percent, would we see a dramatic change in outcomes? And, here is the answer to that question which was published a few years ago: “fundamental research is a long-term investment, the returns of which may not be immediate. This is not a luxury at the cost of the public – if fundamental research is abandoned by the State, it will irreversibly cause a collapse of all applied research in the long run, and the nation cannot ever dream of becoming self-reliant in today’s ‘knowledge society’.... Unlike a factory product, the value of research to society can only be judged in retrospect, which has always been a necessary gamble, and it has paid off everywhere in the world!”(Ghosh, 2005).

Education should *accelerate invention*, while *innovation* will continue to show up from unexpected quarters as well. Innovation, as we understand it today in terms of commercialisation of technology, can happen without systematic education, but inventions, on the other hand, are primarily products of education (applied research). Both need investment. The country should continue to generate new knowledge through basic/fundamental research, and create robust industry-academia partnerships to translate the generated knowledge into applications. Strong R&D initiatives in the Indian industry are an essential element for success in this program.

## WATCH THE DRAGON

China’s investment numbers tell an insightful story. The country’s spending on R&D rose to 2.23 percent of GDP in 2019, an increase of 0.09 percentage points from the previous year. Its total expenditure in monetary terms was 2.21 trillion Chinese Yuan (\$322 billion), which was a rise of 12.5 percent over its previous year. China has continuously seen double-digit percentage increases in R&D expenditure with a stated goal of increasing R&D expenditure to 2.5 percent of GDP by 2020, outlined in its most recent Five-Year Plan (Normile, 2020).

The results are showing, and these investments are now paying off. China has rapidly become a major player in fast-growing high-tech sectors such as nuclear energy, new energy vehicles,

Artificial Intelligence and advanced manufacturing (*Nadir, et al., 2019*). According to a McKinsey report of 2017, one in three of the world's 262 unicorns was Chinese (*Woetzel, et al., 2017*). The country accounts for the largest share of industrial robots at 140,500, which is more than the combined total of the next four countries on the list (Japan – 49,900 units, United States – 33,300 units, South Korea – 27,900 units, & Germany – 20,500 units) (*Liv, 2020*).

In India, though there have been select remarkable successes, the entire research ecosystem – for basic and applied research – has not progressed uniformly. India must pave its own path, but there is much to be learned from China and other countries which show a clear correlation between increased R&D expenditure and technological innovation. The countries with the highest spends on R&D (South Korea, Japan, Denmark, Finland, Sweden, Austria, Switzerland, Germany & United States) are all highly advanced, industrialised nations at the forefront of technological know-how and excellence (*UNESCO Institute for Statistics*). It is, therefore, not a coincidence that most of these nations also rank within the top 20 of the Global Innovation Index 2020 (*Dutta, Lanvin, & Wunsch-Vincent, 2020*).

## ANALYSING THE NATIONAL RESEARCH FOUNDATION'S (NRF) ROLE IN THE TRANSFORMATION

Recognising the pressing need to set up a professional and comprehensive research education framework, the Ministry of Education (formerly the Ministry of Human Resource Development) proposed the establishment of a National Research Foundation (NRF) with the objective of directing human and material resources towards carrying out a well-coordinated research across disciplines. (*The Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC); Ministry of Human Resource Development, 2019, pp. 6-7*)

In her budget speech on 5 July 2019, the Finance Minister, Nirmala Sitharaman announced the establishment of the NRF with the

following points: “We propose to establish a National Research Foundation (NRF) to fund, coordinate, and promote research in the country. NRF will assimilate the research grants being given by various Ministries independent of each other. NRF will ensure that the overall research eco-system in the country is strengthened with a focus on identified thrust areas relevant to our national priorities and towards basic science without duplication of effort and expenditure. We would work out a very progressive and research-oriented structure for NRF. The funds available from all Ministries will be integrated in NRF. This would be adequately supplemented with additional funds.” (*Sitharaman, 2019, p. 14*)

The stated objectives of the NRF are lofty, and if properly implemented are well-positioned to transform India into a global education superpower. In terms of the funding, it is proposed that the NRF be given an annual grant that will eventually reach 0.1 percent of the GDP (approximately INR 20,000 crores in current terms) with the autonomy to make its own financial decisions. (*The Prime Minister’s Science, Technology and Innovation Advisory Council (PM-STIAC); Ministry of Human Resource Development, 2019, p. 12*)

The initial grant is planned to be increased progressively over the next few years. According to NEP–2020, the NRF will competitively fund research in all disciplines across the academic landscape: Science, Technology, Social Sciences, and Arts & Humanities. (*NEP–2020, p. 45*)

However, this is not enough. The quality of research of a country is inextricably linked to its higher education system. The NEP–2020, in its current avatar, promises wholesale change within higher education in India by proposing multidisciplinary universities and more freedom. It does not, however, answer an important question: how does higher education fund better research?

## NEED FOR REFORM IN HIGHER EDUCATION

To answer that, as an immediate first step, at least INR 5,000 crores from the INR 20,000 crores earmarked for the NRF must be released

on competitive merit for research to the public and private higher education institutions. This funding must be non-lapsable and aimed towards enabling an environment of competitive and outstanding research. We must implement a forward-looking ‘*common* norm for public and private HEIs’—every institution should be held accountable, in a progressive and fair way. The schemes will be as good as the people—competence of people who sit in judgement should be unquestionable.

The importance of higher education as a key driver to accelerate invention/innovation in the long-term goal of becoming a global knowledge leader cannot be understated. The major reforms in higher education advocated by the NEP–2020 – holistic and multidisciplinary education, the flexibility of education choices and program durations, etc. – must be aligned to an agile Higher Education framework. In its implementation, the government must not shy away from taking bold steps to promote private philanthropy to meet the Gross Enrolment Ratio (GER) for higher education. At present, Indian universities face various regulations and challenges in creatively endowing their investments. In contrast, premier educational institutions in the United States can maintain, and use large endowment funds to support their research aspirations.

Removing the shackles that have held back higher education organisations from investing their time and skills in research is key to restoring India’s rightful place in the world. An immediate outlay from the proposed NRF to higher education institutions will kickstart this process and reinforce the message that the government is committed to its ambitious goal of transforming education. With a commensurate increase in outlays, we could enable our young talent right from the undergraduate levels to develop scientific thoughts in our institutions, aimed at finding innovative solutions to meet India’s and the world’s most pressing societal and industrial needs.

We need competent leadership; not just resources. How do we create a system where transformational and innovative leadership is encouraged with the pursuit of creating an equitable, fair world? We need to make sure that our elite institutions do not stay elitist. Our

country's research quality and academic standards need to improve by collaboration and meaningful accreditation because only when the research median is high, we will be able to sustain the fragile peaks of excellence on it. There are no shortcuts to excellence, and we need to start now.

## CONCLUSION

More than ever, the unprecedented coronavirus pandemic of 2020 has demonstrated the importance of becoming a nation capable of providing quick and effective solutions to world-changing crises. COVID-19 is not the first and it will not be the last pandemic that affects us, and it is likely that we will encounter more such events in the near future, which will reshape our world. The new normal will keep shifting and we, as a nation, can only be prepared to adapt and create solutions to meet ever-changing needs by cultivating a generation of visionaries, thinkers, and academics who can change the world before it changes them. Our leading universities ought to be in the driver's seat of the 'robust ecosystem of research' with academia-industry-government, national-international partnerships, and maintain *quality*. Let's make a beginning now.

It is an opportune moment as there has been a serious buy-in of the NEP–2020 by almost all the stakeholders—at the individual institution as well as the faculty and student level. The implementation has to have the depth and breadth for the intellectual strength of our country to emerge, with leadership and vision that is '*glocal*': global in its outlook but deeply rooted in its local context.

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# TOWARDS MORE EFFECTIVE RESEARCH IN INDIA RE-ENVISIONING PhD PROGRAMME

K K Aggarwal | Avinash C Sharma

*Within the formal higher education ecosystem, the highest research qualification is the title of Doctorate of Philosophy (formally referred to as PhD). Variability in doctoral degrees has developed over time between disciplines, institutions, and countries. But, logically, there should be something identifiable and widely accepted as ‘doctorateness’ in all the forms. In most of countries, the primary emphasis within the doctorate is on developing disciplinary knowledge, in preference to applied research and knowledge transfer. Productive doctoral scholars is vital and an absolute necessity for the higher education ecosystem and for the health of specific academic disciplines. World-over the key drivers that necessitate the intraventions in PhD ecosystem include a new emphasis on skills and training, submission rates and quality of supervision, changes in the evaluation of the thesis, and may be the introduction of national benchmarking. Finally, we need to have a relook at the entire Doctorate degree program not only to adopt/ adapt to our own emerging academic, industrial & societal changes & evolving requirements (particularly in the light of IR 4.0 already at India’s doorsteps) but also to stay competitive with the rest of the world.*

## PRELUDE

The term ‘Research’ undoubtedly is among the top drivers of societal transformations simply because it originates from the very basic instincts of the human mind namely, curiosity, observing and analyzing; and wherever possible, leading to manipulating

the surroundings and the nature around itself, and leading to an improved quality of life apart from drawing the ‘intellectual satisfaction’. Within the formal higher education ecosystem, the highest research qualification is the title of Doctorate of Philosophy (formally referred to as PhD).

The doctorate as a degree has certainly come of age, and it sits proudly at the top of the ladder of academic qualifications in almost all countries in the world. The rhetoric used to describe the doctorate — for example as “the pinnacle of academic success” (*Nyquist, 2002*), “the zenith of learning” (*Lovat, Monfries and Morrison 2004*), and “the pinnacle of university scholarship” (*Gilbert, 2004*) — is often colorful. Undoubtedly, for most people in most countries, the doctorate is the research degree of choice.

The doctorate takes several different forms in different countries (*Noble, 1994*). In the USA, for example, a doctorate programme usually includes both taking advanced-level taught courses and undertaking academic research, with access to a range of academic advisors and supervisors along the way. In India, so far, the PhD is an in-depth study of a given topic done in research mode under the guidance of a principal supervisor. However, since 2016, advanced level coursework worth 8 to 12 credits has been made mandatory for all scholars admitted to the program. In most of countries, the primary emphasis within the doctorate is on developing disciplinary knowledge, in preference to applied research and knowledge transfer. A strong emphasis on preparing students for any roles (within or beyond the academy) they might expect to fill after completing their doctorate remains rare and largely unclear.

Variability in doctoral degrees has developed over time between disciplines, institutions and countries. But, logically, there should be something identifiable and widely accepted as ‘doctorateness’ in all the forms. A central question, therefore, is “what is the essence of ‘doctorateness’?” Put another way, “what factors must be present for any particular degree to fit into the category?”. What factors allow us to distinguish between a doctorate and other degrees? And subsequently what is expected from a PhD degree holder is different than other degree holders. And at the end, how to utilise

the expertise & skills of the scholars – so groomed, for the benefit of the society.

The literature is peppered with commentaries on how the doctorate is viewed, both within and beyond universities, and again the rhetoric is often quite colorful, but also quite revealing. In the UK, the Winfield Report noted two decades back that “there is an inherent tension within the degree” and “the absence of a research-based literature on doctoral study may have contributed to the apparent uncertainty about the nature, form, and purpose of the degree” (Winfield, 1987). In recent times, many a stakeholders have started questioning the fitness of the purpose of the doctorate.

Nevertheless, the confusion around the role and purpose of doctorate is far from clear. In view of this, the time is right to deliberate upon the very nature of the doctorate, given the multiple drivers for change, multiple agendas at work, and the multiple stakeholders with a keen interest in both the debate and the outcome.

This present discussion paper is aimed at and designed to help frame and initiate such a debate, that makes an attempt to identify the issues and make suggestions to redress and possibly reduce the confusion. An attempt is made to and discusses the very basics regarding the concept of PhD in the backdrop of its historical and recent evolution/ development and try to identify and analyse the drivers of change; mainly three sets of factors that necessitate the conceptual as well as the structural change in doctorate programme the world over, namely,

- *sustaining the supply chain of researchers*: important issues include recruitment, funding, efficiency and cost-effectiveness, the status of researchers, and the growth of interdisciplinary and applied research
- *preparation for employment*: important issues include the doctorate as a labour market qualification, expectations of doctoral candidates, expectations and requirements of employers, transition and mobility
- *internationalisation*: important issues include global competition for doctoral students, the need to have

internationally competitive doctoral programmes, and harmonisation with Europe, particularly through the Bologna Process.

The paper also attempts to identify various aspects, linkages and spinoffs of the doctorate degree that in-totality defines the PhD ecosystem. It also discusses the Indian scenario, strengths and critical challenges, particularly in the context of emerging fourth industrial revolution leading to so called ‘Higher Education 4.0’. After critical analysis, some of the implementable recommendations are presented.

### THE DEGREE: DOCTOR OF PHILOSOPHY (PhD)

Indeed in many countries still the only recognized form of doctorate, is the Doctor of Philosophy (PhD, from the Latin *Philosophice Doctor*), a postgraduate research degree. Whilst the title is derived from the Greek, meaning “Teacher of Philosophy”, and the degree was originally awarded only for studies in philosophy, it has long been possible to study for a PhD in most if not all academic disciplines.

The word “philosophy” comes from two Greek words, meaning ‘love of wisdom’ — (*philos*) adj. ‘love’ + (*sophia*) fem. noun ‘wisdom’. There are different types of philosophy from different times and places. Nevertheless, the term ‘philosophy’ in the degree, perhaps finds its relevance and meaning as:

- i. the rational investigation of the truths and principles of being, knowledge, or conduct.
- ii. any of the three branches, namely
  - natural philosophy,
  - moral philosophy, and
  - metaphysical philosophy,
  - that are accepted as composing this study.

- iii. a particular system of thought based on such study or investigation: the *philosophy of Spinoza*.
- iv. the critical study of the basic principles and concepts of a particular branch of knowledge, especially with a view to improving or reconstituting them: the *philosophy of science*.
- v. a system of principles for guidance in practical affairs.
- vi. an attitude of rationality, patience, composure, and calm in the presence of troubles or annoyances.

The doctorate has a fairly long and interesting history (*Park, 2005a*); some distinctive key landmarks in its evolution being as: birth in medieval Europe as a license to teach in universities, its rebirth as a research degree in Germany in the early 1800s, its redefinition in the USA from the 1860s, and its subsequent diffusion to Europe and elsewhere. The formal degree was first introduced in the UK in 1917, by the University of Oxford. Within a decade or so, the PhD has established itself as a qualification recognized internationally, as the standard qualification for entry into the research and academic professions, and as an important qualification for other labour markets.

India had its first doctorate in the year 1904 when University of Allahabad awarded DSc to Annoda Prasad Sircar (by paper), about half a century after the establishment of the three premier Indian universities. Surprisingly, among the premier universities, University of Calcutta was the first to produce a doctorate in 1909, when the famous medical practitioner Upendranath Brahmachari was awarded PhD. Till 1920, there were 13 doctorate awardees in India, one from Allahabad and the remaining 12 from the the University of Calcutta. The subject-wise breakdown was as follows: Mathematics - 2; Physics - 3; Chemistry - 6; Earth sciences - 1; Medical sciences - 1; and Agriculture - 1. (*Sen, 2015*). As of 2018 over 77800 students are enrolled in research programs in a variety of disciplines spread-over universities and institutions of higher learning all across India.

## TYPES OF PhDs

The traditional ‘Doctor of Philosophy’ referred to as PhD is the best-known advanced research qualification, but several other varieties of doctoral degrees exist. Some of these are academic qualifications in specific subject areas. Others are professional doctorates with a slightly different format.

The way in which candidates study for a PhD is also becoming more varied. The Table-1 gives an overview of the most common types of PhDs. However, the Table doesn’t include every type of doctorate. The doctorates so listed can be broadly categorized as:

Table I Source <https://www.findaphd.com/advice/phd-types/>

PhD Types			
Qualification	Full Title	Subjects	Type
PhD / DPhil	Doctor of Philosophy	All	Academic
DBA	Doctor of Business Administration	Business and Management	Professional
EngD / PhD (Eng)	Doctor of Engineering	Engineering	Professional
EdD / D.Ed	Doctor of Education	Education	Professional
DSocSci	Doctor of Social Science	Social Sciences	Professional
DProf	Doctor of Professional Studies	All	Professional
DArch	Doctor of Architecture	Architecture	Professional
MD	Doctor of Medicine	Medicine and Health Sciences	Professional / Higher
Th.D	Doctor of Theology	Theology and Religious Studies	Academic
DD / DDiv	Doctor of Divinity	Theology and Religious Studies	Higher / Honorary
Dsc / ScD	Doctor of Science	Science, Technology Engineering and Mathematics (STEM)	Higher / Honorary
DLitt / LitD	Doctor of Literature	Arts and Humanities	Higher / Honorary

- **Academic** doctorates (such as the standard PhD) are usually awarded for original research and scholarship

in traditional academic subjects. They can prepare a student for various careers, but their main focus is on broadening theoretical understanding of a subject, rather than improving professional practice.

- **Professional** doctorates are awarded for work that contributes directly to knowledge or practice in a specific vocational field. This still involves original research and analysis, and incorporates more practical training and instruction. Candidates may require appropriate experience.
- **Higher** doctorates are usually awarded later in one's career, as a means of recognising esteemed researchers or practitioners. Students do not normally enroll for these doctorates as traditional university degrees.
- **Honorary** doctorates are awarded to acknowledge an individual's achievements. They do not require any specific track record of academic or professional work and can be granted at the discretion of a university. Students do not enroll for these doctorates. Universities also award these to particular outsiders on the basis of distinguished service or wider contributions to society, and many also award so-called higher doctorates such as the Doctor of Science (DSc) or Doctor of Letters (DLitt) to individuals who have excelled in academic research careers

## STAKEHOLDERS OF PhD

In order to identify and have a better appreciation of the issues concerning the PhD we first take a look at the various stakeholders linked/ connected with the doctorate degree:

- **Students:** For the student, a doctorate can mean many things, including an "academic passport with international reciprocity" (*Noble, 1994*), a license to teach at degree level, and an apprenticeship in 'proper' academic research (*Armstrong, 1994*); and many a time to earn social respectability.



- **Supervisors:** For the supervisor, there is the satisfaction of training apprentice researchers, a route to career progression as an all-round academic practitioner, and a supply of inexpensive research assistants.
- **Academic Departments Within an Institution:** For departments, having doctoral scholars is a mark of research status and credibility, a valuable source of income and contributor to research critical mass, and a supply of teaching assistants to help in undergraduate teaching.
- **Institutions:** For an institution, doctoral students are what Mitchell (2002) calls “the army of research ‘ants’” which helps to keep the research mission moving forward while many academics/educational institutions struggle with heavy workloads and multiple responsibilities. Being a research degree awarding authority is also an indicator of the status and academic credibility of an institution/university.
- **Disciplines of Study:** For disciplines, doctoral scholars serve as important manciples with an implicit responsibility to keep the discipline alive, and intellectually vibrant; and ensure a supply chain of future academicians and researchers.
- **Funding Agencies:** For funding bodies, such as DST/ DAE/ CSIR/ DBT and other similar research councils, investment in doctoral programmes supports capacity-building of future academicians and researchers, the growth of critical mass in research teams, and a sustenance of high quality research that brings both academic and applied benefits for the nation.
- **Employers:** For employers, doctoral graduates are creative high-skilled, and human capital, which is a gateway to innovative thinking and knowledge transfer.
- **The Nation:** For the nation, the obvious benefits of an active and vibrant community of scholars engaged in

doctoral level research include enhanced creativity and innovation, and the development of a skilled workforce, and of intellectual capital and knowledge creating/ transfer, which are engines of the growth of cultural capital and a prosperous knowledge economy.

## THE PhD ECOSYSTEM

Productive doctoral scholars are vital and an absolute necessity for the higher education ecosystem and for the health of specific academic disciplines. Some of the parameters that go into defining of PhD ecosystem can be identified as in following:

### *Sustaining the Supply Chain of Researchers*

From a national perspective, maintaining a steady and reliable supply chain of researchers is crucial, particularly in today's knowledge economy wherein researchers are key players in knowledge transfer. Doctorate scholars are, in fact, custodians of the disciplines and also a source of development of newer multidisciplinary areas. A sustained supply of doctoral students is essential to grow the next generation of academics but to maintain vitality and research momentum in disciplines.

### *Recruitment*

Several factors affect the recruitment of doctoral students. There can be several reasons and motives for choosing to invest time in doctoral research. Most do it because they see it as the passport to a particular career (mostly an academic), some as part of their professional development, and a few do it out of simple curiosity and for personal intellectual satisfaction.

### *Funding*

A key determinant of the sustainability of the supply chain of researchers is funding to support both research and researchers. In some countries doctoral candidates are, strictly speaking, not students

but members of staff and research assistants who are paid salaries. But most doctoral candidates in India are students, and they can access funding from many different sources, usually on a competitive basis. Around a third of full-time doctoral students are funded by the research councils, and this remains the largest single external source of doctoral funding. It is not just the availability of funding that matters, it is the form in which the funding is released; unfortunately, is quite unsystematic & irregular.

### *Efficiency and Cost-effectiveness*

Those who fund research naturally have a vested interest in the efficiency of doctoral education, in order to ensure that financial support is used appropriately and that resources are deployed to optimum advantage. Considerations of the cost-effectiveness of doctoral study arise at two scales, that of the individual researcher and that of the institution. Over the years, the cost of carrying out quality research had increased manifold. In India, this is particularly true for high-end scientific fields like Bio-Technology, Nano-Technology, medicines, pharmaceutical sciences, etc. mainly because of the increased level of sophistication and the high-end high precision technology infrastructural requirements. In the last few decades, our country had experimented with many concepts like Inter-University centres (like Inter-University Accelerator Centre (IUAC), Inter-University Center for Astronomy and Astrophysics (IUCAA), etc.), research and innovation clusters, encouraging collaborative research programmes in the niche areas, etc. The centres have established all possible centralised technical infrastructure and support facilities for the use of researchers spread all over the country.

### *Status of Researchers*

Funding also has a major impact on the status of researchers. Traditionally, it is linked with who pays tuition fees and who receives a stipend. The status of researchers is impacted by their perceived role in the society in general, apart from their earning capacity. In India, in the last two decades, the status of the PhD scholars got diluted mainly because of the emergence of private players and secondly,

because of the way the credit of research works has been inducted in the Academic Performance Index (API) of the faculty promotion. This has increased the number of PhDs and also a number of research publications but the quality of research has been seriously impacted leading to a steady deterioration in the status and acceptance level of the PhDs so produced in the job market.

### ***Growth of Interdisciplinary and Applied Research***

The changing nature of academic research has a relatively minor impact on the supply chain of researchers. Relatively little attention has yet been devoted to the challenge to doctoral programmes posed by the growth of interdisciplinary research — which Metz (2001) characterises as “intellectual border crossing” and Gilbert (2004) views as “most productive in innovation and discovery” — and of applied research which has an emphasis on relevance to society and knowledge transfer. This underlying trend will inevitably necessitate changes in doctoral programmes in the years ahead.

In recent times in India, this got a huge push and support from the state. The Biotechnology mission, Nano Mission and very recent Quantum Mission of GoI are a few examples.

### ***Preparation for Employment***

The challenge for doctoral education is not simply a matter of the number of doctoral students passing through the supply chain of researchers; it is also a matter of quality, in the sense of fitness for purpose. How well suited are doctoral graduates for the sort of careers they want or end up in? Key issues relating to the doctorate as preparation for employment include the doctorate as a labour market qualification, the expectations of doctoral candidates, expectations and requirements of employers, and transition and mobility.

Alternatively, can we redesign doctoral training (at least in certain identified areas) so that the PhD holders thus produced, may turn out to be employment generators and entrepreneurs instead of job seekers?. This has already started happening in some of the developed countries, such as the USA.

### ***Doctorate as a Workforce Market Qualification***

The premise to prepare doctoral students for careers beyond the academy and for the wider economy, is already at work in the USA. The need is to recognize that the core competencies expected of doctoral graduates is the *ability to see oneself as a scholar-citizen who will connect his or her expertise to the needs of society*. The challenge of adequately preparing doctoral students for careers beyond the academy by developing their transferable skills lies at the heart of the new skills agenda for research policy planners. Surely, similar scenario is fast emerging in India as well.

Fine-tuning the supply of doctoral graduates with the appropriate skills and competencies will require much better tracking of career paths, and a better understanding of the links between skills, other attributes, and employability. The USA is perhaps far ahead on this thought process.

### ***Expectations of Doctoral Candidates***

Critical to employability and career development, students' motives vary a great deal. Most of the PhD students who want to be in academics are expectedly the best ones.

Some of the career motivations and expectations of doctoral researchers are to pursue a career in research, to research their field in greater depth, to enhance their career prospects outside the academy, and to enhance their career prospects within the academy. This perhaps, aims at the possible career options they are actually considering.

### ***Expectations and Requirements of Employers***

Employers outside universities have particular expectations of what doctoral graduates should be able to offer. Industrial employers usually prefer people with multidisciplinary and international exposure, flexible approach, and a fair business knack.

It is a double-edged sword, because while doctoral graduates usually do bring added value to an enterprise — including specialist knowledge,

research, and analytical skills, future potential, and maturity — realising this potential is often constrained by a series of potential barriers which employers must confront and find effective ways of dealing with. Doctoral students invariably lack commercial awareness, are generally over-specialised, face difficulties in adapting to non-academic work cultures, and often have unrealistic expectations (*McCarthy and Souter, 2006*).

### ***Transition and Mobility***

There are two other important themes relating to the preparation of doctoral students for employment: (i) these are the time they take for transition from being a student to being a productive employee, and (ii) the degree of mobility they are likely to enjoy between different sectors as their careers progress.

Greater flexibility of career paths for researchers, including the possibility of moving freely in both directions between the academy and the world beyond it, would be widely welcomed. It would bring a number of benefits, including helping to foster effective knowledge transfer and disseminating creativity and good practice, and making the prospects of a research career look more attractive (thus boosting recruitment onto doctoral programmes). Increasing the geographical mobility of researchers, by making it easier for them to develop careers across national boundaries, must be a key objective.

### ***Internationalisation***

Many countries are facing major challenges relating to internationalisation. In the Indian context, this is practically a one-way traffic. In the absence of sufficient academic positions, a large number of PhD holders move to countries like European Union, Japan, US, UK for post-doctoral positions. Many of them return to India and get frustrated due to a lack of a conducive environment (and attitude) and go back again to settle abroad. There is hardly any encouraging environment for PhD holders from foreign universities, to look forward and get attracted to the Indian job market. Although, in recent times, there is a steady increase in foreign experts availing short-term assignments in India.

### ***Institutional Regulations and Definitions***

Although no one stakeholder has overall responsibility for defining what a doctorate is, and what form it should take, institutions deliver the doctoral programmes and award the degrees so they have a major stake in such decisions. Because of this discretion, the diversity of ways in which university regulations define the doctorate is not really surprising. In essence, a doctorate is what the regulations of a particular university say it is. Little wonder, then, that considerable variations in statutes and practices exist, for example, in relation to the period of study (minima and maxima); the requirements to be met for award of the degree; and whether there is a specified length for the thesis (although most universities which do specify this put the maximum length at 100,000 words). Nevertheless, several common threads appear in most university regulations for the doctorate, like *the need for original research as a contribution to knowledge*.

While universities throughout India continue to enjoy a great deal of autonomy, they are increasingly being subject to external scrutiny and finding themselves accountable to external agencies such as the funding councils, research councils, regulatory bodies like University Grants Commission, All India Council for Technical Education, Bar Council of India, Medical Council of India, etc. A key element in this scrutiny and accountability is the extent to which the institution has embraced both in spirit and letter.

### ***Supervision***

Traditionally, most supervision was based on the ‘secret garden’ model (Park 2006), wherein student and supervisor worked closely together with very nominal external scrutiny or accountability.

In recent times, the changing expectations and requirements of supervisors, are the need for appropriate personal and professional development of those who supervise. Most institutions face major challenges in encouraging or incentivising supervisors to make use of the supervisor development opportunities that are now fairly widely available.

In the emerging era of HE 4.0, supervision must now be more transparent and more accountable, and institutions are expected to have clearly defined roles and responsibilities for both supervisors and research scholars, and clear criteria for defining who is eligible to act as a supervisor.

### *Integration*

Fully integrating appropriate skill development activities within research degree programmes, so that they are not viewed and treated as an add-on or a separate stream that can be ignored, is a major challenge in most institutions. Particular challenges surround the development of skills in 'knowledge leadership', knowledge transfer, and the commercialization of the research outputs if doctoral programmes are to produce graduates who can make a real difference in the wider economy, well beyond the academy.

### *Assessment*

Traditionally, the examination has focused almost exclusively on the thesis submitted by the student, through an evaluation by internal committee followed by an external examiner, and finally an oral defence of thesis (conventionally referred to as the viva voce). Perhaps examiners need to remember that it's a PhD, not merely a casual evaluation.

As doctoral programmes broaden to encompass skill development and research training, as well as actually doing the research and writing it up in the form of the thesis, questions are being asked about how best to accommodate this broader remit into the examination process. The time is appropriate to initiate a debate on the assessment of the PhD.

Some of the obvious issues that needs to be addressed are listed below:

- a. Should the primary emphasis in examining the doctorate be on the thesis or the process (developing the researcher), or what is an appropriate mix of the two?



- b. Should the examination process be adjusted keeping in view the special circumstances of work-based professional doctorate. If so, how?
- c. Is the traditional closed examination (open only to the two or at most three examiners and the scholar, many a time with the supervisor present as a silent witness) still appropriate, given the much more open process favoured through most of Europe, which involves an ‘examination’ to which outsiders (sometimes even including members of the public) are invited?
- d. Should the focus rest on the thesis as sole evidence of scholarly output, without even requiring evidence of other scholarly outputs such as publications in peer-reviewed journals? Mostly, the scholars are expected to publish at least one or two research papers in peer reviewed academic journals.

### *Diversity of Awards*

One way in which doctoral education in the UK has adapted to changing market conditions is by developing a range of new doctoral degrees tailored to niche markets. This approach, based on diversification and differentiation, is proving quite successful. It does pose some challenges for the sector in terms of ensuring comparability of quality and standards, particularly because some of the new doctoral models incorporate elements such as taught modules, work-based learning, and novel forms of output rather than relying solely on the traditional thesis.

## DRIVERS OF CHANGE

World over the key drivers that necessitate the intraventions in PhD ecosystem include a new emphasis on skills and training, submission rates and quality of supervision; changes in the evaluation of the theses; and may be the introduction of national benchmarking. In recent years, in many a country, various stakeholder groups have been questioning the fitness for purpose of the doctorate.

Two international reviews of the different models of the doctorate adopted in different countries provide a global overview. Noble (1994) described wide variations in practice between different countries, and concluded that doctoral programmes would be improved by accepting fewer students, paying salaries to doctoral students, and removing the viva as a form of examination. More recently, Powell and Green (2007) have examined the doctorate in 17 countries, and noted significant variations in the declared purpose of the doctorate, and a general tendency to concentrate delivery of the degree in a limited number of institutions. A few interesting examples are in order as follows:

**(i) Australia**

In Australia, Gilbert (2004) asks whether the time is right to assess the capacity of the doctorate to respond to a long list of challenges, which include stronger links between academic research and real-world challenges; the growth of interdisciplinary and multidisciplinary research; changing conceptions of knowledge and expertise; the increasing pace and spread of knowledge production and transfer; increasing emphasis on the development of generic or transferable skills; changing roles of academics and experts “derived from ideas of entrepreneurship, knowledge work, the public intellectual and advocacy for science and research”; and diversification of doctoral awards and models (including professional doctorates).

**(ii) The USA**

Reflection on the doctorate has been most persistent and most intense in the USA. Cude, way back in 1987 had noted that many North American doctoral programmes are inflexible, cumbersome, restrictive, and wasteful. Several commentaries on doctoral education in the USA identify an over-supply of doctoral graduates for the academic job market, lack of preparation and skills development for careers beyond the university and for careers as teachers in universities; lack of appropriate supervision,

particularly for career development; a learning experience that is too deep and narrow, too specialised and academic, and too campus-based; inability to work effectively in an interdisciplinary environment; and recurrent difficulties in securing funding.

While India has much to learn from how the US has reflected on the nature of doctoral education, there are lessons in how the US has sought to address many of the issues. Some typical major well-funded national projects designed to tackle challenges peculiar to doctorate in USA are:

- Preparing Future Faculty launched in 1993
- Responsive PhD Initiative (*Anon, 2006b*)
- Carnegie Initiative on the Doctorate and have provided vital inputs for the policy planners

### (iii) Europe

Doctoral education has also come under scrutiny in Europe. In the Nordic countries (Denmark, Finland, Norway, Sweden), for example, drop-out rates are high, completion times tend to be long, and graduates are viewed as too specialised and poorly prepared for work outside universities (*Steinwall, 2006*).

Change is already underway all across Europe. It is evidenced, for example, in the emergence of subject-specific training, transferable skills training, support and quality assurance in many countries, and the development of doctoral programmes and Graduate Schools (*Ritter 2006*). Increasing harmonisation of the higher education landscape across Europe, driven by the Bologna Agenda (*van der Wende, 2000*), is inevitably promoting further convergence of national systems of doctoral education in European Union countries.

#### (iv) India

In India, the PhD as a degree has also come of an age. In the last decade, there have emerged serious concerns from the diversity, quality and the employability of the PhD holders. The three immediate key drivers of change to the doctorate world over including in India are: sustaining the supply chain of researchers, preparation for employment, and internationalisation.

### INDIAN SCENARIO AND GLOBAL INTEGRATION

India's higher education system is the third largest in the world, next to the United States and China. The Indian higher education system has expanded at a phenomenal rate during the 21st Century and it shows no sign of stopping. This rapid growth in the number of universities and institutions is also providing a range of PhD research opportunities, from cutting-edge science and engineering projects to unique programmes exploring the country's own diverse history and culture. In fact, India does provide a wide and diverse range of opportunities for PhD level scholarly works.

In the Indian context, the requirement for doctorates is much more, not only in terms of numbers but also in terms of variety and diversity of applicability. This is particularly true, in view of the recent push/ thrust towards manufacturing of products, several large scale national projects like 'Make in India', smart cities projects, multinational *mega-science* projects like INO, LIGO-India, ITER, etc. wherein there is going to be a huge requirement of high-skilled and highly specialized experts with a vision of future.

India's rich culture, cultural wisdom, stunning geography, or diverse anthropology need little introduction and are a universal part of its appeal as a visitor destination. When it comes to an international study, however, there's arguably never been a better time to consider a longer-term stay as a PhD student in India.

Some of the reasons to consider joining PhD at an Indian university may be listed as follows:

- *Diversity and specialisation* - Whether one wants to research Business Management, Bombay Cinema, or Buddhist Philosophy, the scope and options for PhD study in India exist in abundance.
- *Affordability and accessibility* - PhD fees in India vary a lot widely but are often surprisingly low. Further, English is widely understood and is adopted as the language of instruction all across institutions of higher learning.
- *Increasing global recognition* - University rankings have taken some time to catch up with the speed of India's higher education expansion, but this is beginning to change. A few of India's leading universities and institutes now feature in international league tables for 2019.
- *Youth and dynamism* - India's current population is one of the youngest in the world. This fresh and dynamic outlook helps drive a culture of innovation and entrepreneurialism. One will fit right in as a PhD researcher looking to develop new ideas and approaches.

Universities in India are regulated by the University Grants Commission. This is an official body ensuring that higher education including the PhD, in India is properly supported and meets appropriate standards. The sheer size of India's university system means that opportunities for PhD study exist right across the country. However, there are a number of key 'hubs' for study and research. These include major cities such as Mumbai, Delhi, Bangalore, Hyderabad, Kanpur, and Pune.

### ***Indian Universities and Institutions of Higher Learning***

Global rankings are beginning to reflect the growth of India's university system and its increasing research experience in key subject areas. India's higher education system is one of the world's biggest, with approximately 900 different universities. It's also one of the most diverse, as these institutions fall into a range of different categories.

There are different varieties of universities with the potential to offer PhD programmes in India; namely Central universities (47), State Universities (390), Private Universities (307), Deemed Universities (124); *Institutions of National Importance* (INIs) include IITs(23), NITs (31), IIMs (7), IISERs (7), NIPERs(7), AIIMS (7), SPAs (3) and are the most prestigious higher education institutions, tasked with strategic academic and professional objectives. The distinction between different groups lies in the way they are established and administered.

This has the potential to seem confusing, but, for prospective PhD students, the differences between individual universities (or groupings) won't generally be as important as the specific research projects and programmes they offer.

Many a faculty in colleges carry out research activities, and conduct research projects, although in a limited way and mostly in collaboration with faculty & researchers in the associated university's departments.

### ***The PhD Programmes***

It's common for Indian universities to establish doctoral programmes within which their postgraduate students receive additional training and support as they carry out their research. PhD programmes often commence with a coursework phase. This provides specialist subject knowledge and research skills a student needs in order to carry out their own independent research. Thereafter one prepares a synopsis of the work to be pursued and is assigned an appropriate supervisor to guide. From this point onward one works more independently, carrying out research and culminating in new findings and results and compiling into a thesis. In most cases one spends at least three years on PhD.

### ***Some Concerns***

In the recent past, there are signs of widespread concern across India about the quality of the doctoral degrees, either in terms of the

academic quality of the finished product (the thesis, which is judged by peer review) or the research degree programmes that underpin it, which have recently been indirectly evaluated in the accreditation process of the various institutions and universities.

But there are clouds on the horizon about some key aspects of doctoral education in India, particularly now that there are concerns regarding the quality of the thesis, the way research is being conducted and the researcher trained thereof, and high quality research and almost absence of front-line/cutting-edge research. Concerns have also been voiced about how the Indian doctorate is viewed abroad and the ability of Indian universities to compete effectively in the global market and about the challenges of meeting international expectations.

There are several domestic concerns, too, including the impact of inadequate training of students at UG & PG degrees prior to PhD, their attitudes towards continuing onto research based further study, and the employability of doctoral graduates.

### *Stakeholder Perspectives*

The key stakeholder groups directly linked with the doctorate programmes in India are:

- a. The Funding Agencies: Ministry of Education (MoE), Department of Science & Technology (DST), Department of Atomic Energy (DAE), Council of Scientific & Industrial Research (CSIR), etc.
- b. The Quality Assurance Agencies: National Assessment and Accreditation Council (NAAC), National National Board of Accreditation (NBA)
- c. Regulatory Bodies: University Grants Commission (UGC), All India Council for Technical Education (AICTE), etc.
- d. Universities (Central/State/Private)
- e. Higher Education Institutions (HEIs)
- f. Employers

“Who owns the doctorate?” is an interesting and perhaps most pertinent question, because while universities are *custodians of academic standards and have the responsibility to award the degree*, no one group has complete responsibility for defining what a doctorate is and what form it should take. As Nyquist (2002) noted for the USA, but is equally true for other countries, ‘although research institutions have tended to believe that they ‘own the PhD’ because they design the programs, recruit the students, and confer the degree, it has become abundantly clear that a PhD is the product of multiple owners or stakeholders, not the least of which are the doctoral students themselves”.

The question “Who cares?” is also vitally important, because any significant change to the doctorate will inevitably have impacts on many different groups of stakeholders. Within doctoral education there are multiple stakeholders with different interests, expectations, and agendas. Inevitably, therefore, a doctoral degree when viewed through different lenses can mean different things. Surely there is a serious lack of communication between different groups of stakeholders and also within the group as well. The lack of co-ordination is more felt (& evident) at the research-degree level.

## CONCLUSIVE OBSERVATIONS AND RECOMMENDATIONS

To summarise, a PhD programme is a specialized training that requires very different kinds of attitudes and capabilities. Some of the essentials or core attributes of a PhD Scholar and the qualities that get strengthened during the process of PhD may be listed as follows:

- **Intelligence:** most people are ‘brainy’ enough to pursue a PhD in general.
- **Intellectual Curiosity:** one must have the intellectual curiosity to care about why something is true or false.
- **Perseverance:** one should have the fortitude to investigate a problem with irrational ambition. When



one is pushing the boundaries of knowledge, things often look ‘impossible.’

- **Patience:** in research, things take time, things break, collaborators flake. If one is impatient. The process of PhD therefore surely tests one’s patience.
- **Creativity:** one need to be able to think of ways to solve a problem that has not already been tried.
- **Enjoy Academia:** If one is going to spend another five years or so after undergrad, one better like all of the cultural aspects of academia.
- **Money not an issue:** At best, one get paid a simple stipend. So better either love the simple life, or be independently wealthy.
- **Comfortable with ambiguity:** no one will micromanage the scholar. One better love being independent.
- **Can work late:** While some manage a 9-5 schedule. This is not typical. There will be times that you will be working late, even for simple reasons like having to switch a sample if you are doing an experiment.
- **One is always ‘Plugged In’:** A PhD is a continuous five years devoted to a field. One just can’t ‘turn it off’ even if one is out of the lab or at home. Not many people are good at doing so. So, the scholar enjoys the idea of always having work to do. It doesn’t mean always working, it just means the work doesn’t ‘end.’
- **Can work alone:** Most PhDs are an independent process, so if one wants to be interacting with people all the time, a PhD is likely not for you. This is just a ‘starting’ list of things that *Must* be true for one to be a capable researcher. Not necessarily to ‘succeed’ that list is both much longer *and* highly field/situation dependent.

The time has come when we need to relook at the entire Doctorate degree program not only to adopt /adapt to our own emerging

academic, industrial and societal changes and evolving requirements (particularly in the light of IR 4.0 already at India's doorsteps) but also to stay competitive with the rest of the world. Some of the recommendations are as follows :

- Push for reform citing the need to put *philosophy* back into the *Doctor of Philosophy*.
- Train PhD students to be thinkers, not just specialists.
- Nurture big thinkers and creative problem-solvers that society needs.
- Scholars need to be taught to recognize how errors can and do occur. Trainees should evaluate case studies desired from flawed real research, or use interdisciplinary detective games to find logical fallacies in the literature.
- Students must be shown the scientific process as it is its limitations and potential pitfalls as well as its funside, such as serendipitous discoveries and hilarious blunders.
- Push for interdisciplinary and multidisciplinary research work.
- The actions necessitate new and flexible governance structures for co-supervision and resource-sharing.
- More autonomy to a credible pool of Supervisors for evaluation of doctorate thesis so as to ensure the quality of PhD programme.
- Financial assistance/ stipend/ maintenance allowance to *everybody* enrolled in the PhD program.
- At the end, it is the ability to see oneself as an enlightened scholar - citizen and capable of connecting his/ her expertise to the needs of society; that should define a doctorate awardee.
- PhD holders are to be treated as a national resource.

To conclude, it is hoped that the present work shall initiate engagement of stakeholders at national and international forums

on transforming doctoral education to meet the needs of the 21st century as recommended by the National Education Policy–2020.

## Endnote

The article is based upon several informal discussions and is an outcome of various formal debates and deliberations on various platforms. The main content of the essay is an extract of the VIF Task Force Report : *Towards More Effective Education: Emergence of STEM Education in India*, March 2019 prepared under the Chairmanship of the Author.

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# BUILDING COLLABORATIVE RESEARCH CULTURE FOR IMPLEMENTATION OF NATIONAL EDUCATION POLICY-2020

Parimal H Vyas

*The NEP-2020 calls for closer collaboration between industry and Higher Education Information Service (HEIs) to initiate innovation and encourage active research. It advocates a very rigorous and all-inclusive method to transform the quality and quantity of research in India. In a nutshell, the NEP-2020 envisages the formation of the National Research Foundation (NRF) to facilitate funding and to incentivise for remarkable research in priority areas with the aim of allowing a culture of research to pervade in Indian Higher Education Information Service (HEIs) (or) universities. The need of the hour is to focus on developing collaborative research culture through strategic and innovative use of capabilities, capacities, and potential of researchers to build India as global superpower in the 21st century.*

## PRELUDE

As the global community shifts its standpoint from the Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs), the role and set of expectations from Higher Education Institutions (HEIs) in responding to challenges viz., quality of public services, sustainable agriculture, equitable distribution of resources, environmental protection and active Governance requires high-level skills, research and innovation generated at the local and global levels. It calls for transformation and paradigm shift to search for its solutions making innovative use of research with support of technology. Although, there remains the challenge of how we can realise the growth and development potential of HEIs or Universities in India (*Lora Power, Kery A. Millington and Stephnie Bengtsson, 2015*).

As India drives towards becoming a global knowledge power, we need to have large number of researchers working on solving problems having societal impact. According to World Bank Data, India had only 253 researchers in R&D per million people in 2018. It was less than 06 percent in comparison to Europe and 16 percent less to that of China. India has a smaller number of researchers per lakh population compared to China, US, and even small nations like Israel (*Indian Express*, 4 November, 2020). India spent less than 0.7 percent of the Gross Domestic Product (GDP) towards Research and Development Expenditure in 2018 against the world average of 2.2 percent to 2.58 percent that of high income developed countries (<https://data.worldbank.org>).

According to the All India Survey of Higher Education (AISHE), the number of research scholars pursuing PhD is less than 0.5 percent considering enrolment of 1,69,170 PhD research scholars enrolled for PhD Only 2.5 percent colleges offer PhD Programmes and maximum number opt for science stream followed by Engineering and Technology. The proportion of PhD. Students' registration is highest in State Public Universities (34.3 percent) followed by Institutes of National Importance (21.6 percent), Deemed Private Universities (21.6 percent) and State Private Universities (13.4 percent). The investment figures for research and innovation compared with GDP is 2.8 percent of US, 4.2 percent of South Korea, 4.3 percent of Israel and for India, it is only 0.7 percent (<http://aishe.nic.in>).

Central Government budget allocation on education was Rs. 94,854 Crores in 2019–20, which increased from a revised estimate of Rs. 83,626 Crores of 2018–19. The net allocation for higher education under the Ministry of Human Resource Development (MHRD) now called as Ministry of Education (MoE) was Rs 38,317 Crores. Spending on different aspects of higher education including research and innovation revealed a decline of 10 percent in research and innovation in 2020–2021, whereas the spending was expected to decline from Rs. 340 Crores of 2019–20 to Rs. 307 Crores in 2020–21. The spending on research intensive Central Universities too has shown decline of 8 percent. Though, the spending on Indian Institutes

of Science Education Research (IISERs), has revealed increase of 7 percent. The budget allocation for 2020–21 to UGC and AICTE has revealed increase of 5 percent. IITs and NITs are to receive 10 percent additional financial assistance in 2020–21. Central Government has also raised funding by 23 percent for setting up world class institutions (<https://www.prsindia.org>).

## REVIEWING KEY CHARACTERISTICS AND RESEARCH FACETS OF THE NEP–2020

After a long gap of 34 years, the Government of India has approved the National Education Policy (NEP) 2020 on 29th July, 2020. It intends to build world class education system ingrained in Indian ethos and to renovate India into a global knowledge superpower. The NEP–2020 is innovative; student (or) learner-centric; flexible; all-inclusive; integrated; equitable; transformational; revolutionary & futuristic one to achieve holistic growth & development of *Bharatiya* citizens with moral, ethical, social & above all constitutional values.

It has proposed revision and overhauling of education structure, including its regulation and Governance aligned to realise aspirational goals of the 21st century education. The NEP–2020 can be truly called as “*Bharatiya Shiksha Niti*” and it’s a blueprint for self-reliant India. It offers transformational road map and framework for Bharat to become ‘*Vishwaguru*’.

The key drive of the NEP–2020 is to finish fragmentations of higher education by transforming HEIs into big multidisciplinary universities. It has envisioned that all existing HEIs to grow into research-intensive universities (RUs), teaching universities (TUs), and autonomous degree-granting colleges (ACs) with due consideration of its vision, mission, domain strength and SWOC (Strengths, Weaknesses, Opportunities, Challenges). RUs will concentrate upon research whereas, TUs would lay big emphasis on teaching with strategic focus on conducting substantial research.

One of the innovative recommendations of the NEP is offering flexible different designs of Masters programmes (a) 4-Year Bachelors Programme with research coupled with a one-year



Masters Programme; (b) 2-year programme with the second year totally meant for conducting research for those who have completed the three-year Bachelors programme; (c) ) for students completing a four-year Bachelors programme with research, there would be a one-year Masters programme; and (d) an integrated five-year Bachelor's/Masters programme. Henceforth, undertaking a PhD shall require either a Master's degree or a 4-year Bachelor's degree with research. It implies strategic focus of the NEP for offering Graduate-level that is Master's and Doctoral research in big multidisciplinary universities with provisioning of rigorous research-based specialisation for undertaking multidisciplinary research with active support and engagement of academia, industry, and Government.

HEIs are expected to establish Start-Up Incubation Centres, Technology Development Centres, Centres in frontier areas of research, greater Industry-Academic linkages, and Inter-Disciplinary Research including research centres for Humanities/Social Sciences.

## **BUILDING RESEARCH CULTURE THROUGH IMPLEMENTATION OF NEP–2020**

Culture is the set of basic values, perceptions, wants, and behaviours learned by a member of society from family and other important institutions (*Philip Kotler and Gry Armstrong, 2012*). One of the key characteristics for building research culture is organization's approach to research integrity which consists of the formal and informal ethics, standards, protocols and policies and its adherence by the concerned researchers in conduct of research activities for building collaborative research culture (*Key Chaplin, and Dvid Price, 2018*). The NEP–2020 has recommended launch of a fast track promotion system for high impactful research with the help of establishment of system for scientific, objective and unbiased assessment of performance based on certain criteria viz., peer and student reviews, innovations in teaching and pedagogy, quality and impact of research, professional development activities, and contribution in the HEIs and society.

The NEP–2020 calls for closer collaboration between industry and HEIs to initiate innovation and encourage active research. It advocates a very rigorous and all-inclusive method to transform the quality and quantity of research in India. It has stressed upon need for recognising students' interest and talent supported with system of mentoring for young innovators. Above all, the NEP calls for making big investments in research and coordinated effort amongst all HEIs to place India in global knowledge production.

In a nutshell, the NEP–2020 clearly states that the higher education system must be restructured to result into holistic growth and development of students in HEIs. The NEP–2020 focuses on improving quality of research in HEIs with the help of research internships especially in the undergraduate curriculum, creating faculty career management systems with due weightage to research, and bring in governance and regulatory reforms to empower faculty and institutional autonomy and innovation.

### **THE ROLE OF NATIONAL RESEARCH FOUNDATION (NRF) IN PROMOTING RESEARCH CULTURE**

The NEP–2020 envisages the formation of the National Research Foundation (NRF) to facilitate funding and to incentivise for remarkable research in priority areas with the aim of allowing a culture of research to pervade in Indian HEIs (or) universities.

The NRF would develop research support to initiate fundamental research and also to facilitate assessment of its socio-economic impact. It would look after funding, mentoring, and building capacities and improving quality of research in HEIs of India. It would offer funding to researchers across all disciplines in India to carry out socially significant and relevant high-quality research with close linkages and support of academia, governmental agencies, industry and private/philanthropic organisations. It would fund individual projects, collaborative or group projects, capacity-building initiatives and transformative mega-projects in HEIs.

## PROPOSED ACTION PLAN FOR IMPLEMENTATION OF NEP–2020 TO BUILD RESEARCH CULTURE

To achieve goals of the NEP–2020, restructuring of academic curriculum of under-graduate courses and making research component compulsory in postgraduate courses is highly essential while preparing time bound action plan for implementation of the NEP–2020. This also requires setting up of research cells and centres to provide impetus to quality and socially significant research in HEIs which would also act for liaising with the industry. The HEIs should continually upgrade their research facilities along with maintaining well-defined eco system for identifying, encouraging, and rewarding start-ups, entrepreneurial initiatives and above all encouraging innovations. A detailed Action Plan is proposed here for different sets of Goals for Implementation of NEP–2020 for Building Research Culture; Strategies to Meet the Goals; Timelines; and Operational Details.

Sr. No.	Goals of Implementation of NEP for building Research Culture	Action Plan (Strategies to meet the Goal)	Timeline
01	<ul style="list-style-type: none"> <li>• To create and develop awareness regarding importance of Research among Faculty Members, Research Scholars, and Students.</li> <li>• To focus on Interdisciplinary and Multidisciplinary research in cutting-edge and disruptive areas.</li> <li>• To mobilise resources with the support of Donor/Alumni/ funding Agencies/Corporate/ Industry/Institutions/ Government Departments/ NGOs and other Organisations.</li> </ul>	<ul style="list-style-type: none"> <li>• To establish Research Cells in Faculties/Departments/Colleges/ Schools of the HEIs.</li> </ul>	<ul style="list-style-type: none"> <li>• Short-term to Mid-term (25 Years)</li> </ul>

### Operational Details

- Developing awareness among undergraduate Students/Post graduates/Research Scholars and Students for participating/organising/different sets of research activities.
- Facilitating and supporting faculty members for the conduct of research activities.
- Identifying the potential thrust areas of research considering domain areas of Faculties/ Departments/Colleges/Schools of the HEIs to form various Clusters based on their Specialization.
- Facilitating preparation and submission of research proposals by Faculty Members/Research Scholars and Students to various Funding Agencies/Corporate/Donor/Alumni Associations etc.
- Helping Faculties/Departments/Colleges/Schools of the HEIs to apply for central projects like FIST, SAP, ICSSR, CAS etc.

<b>Operational Details</b>	
<ul style="list-style-type: none"> <li>• Interacting with researchers from inside and outside to enhance Interdisciplinary and Multidisciplinary research activities.</li> <li>• Coordinating Interdisciplinary and Multidisciplinary research internally within the Faculties/ Departments/Colleges/Schools of the HEIs and externally with other Universities/Corporate/ Industry/Institutions/Government Departments/NGOs and other Organisations.</li> <li>• Supporting the Faculty Members/Research Scholars and Students to attend and participate in various academic and research events such as Conferences/Workshops/Seminars/Webinars etc.</li> <li>• Assisting the Faculty Members/Research Scholars and Students in quality research publishing activities.</li> <li>• Helping Faculty Members/Research Scholars and Students to attend and participate in various Quality Improvement Programmes.</li> <li>• Planning for resource mobilisation by interaction with Donor/Alumni/Funding Agencies/Corporate/ Industry/Government Departments/NGOs and various other Institutions/Organisations.</li> <li>• Scrutinising the student’s project proposals and their submission to various funding agencies for financial support and recommending suitable projects.</li> <li>• Setting up Chapters of Professional Organisations.</li> <li>• Initiating, planning, organising, and executing various kinds of research activities.</li> <li>• Supporting, guiding, and counselling Research Scholars/Students as a student support system.</li> <li>• Maintaining constant Liaison with Donor/Alumni/Funding Agencies/Industries and Corporate Houses.</li> <li>• Initiating Research Internships Coordinating with Publication Houses for conduction of Sensitisation Programmes on quality research publications.</li> <li>• Advising Research Students on how to publish, where to publish, and what to publish.</li> <li>• Making Faculty Members and Research Students aware of Publication Metrics.</li> <li>• Interacting with Faculty Members/Research Scholars and Students on Research Ethics and Plagiarism.</li> <li>• Interacting with Faculty Members/Research Scholars and Students regarding Patents and Copyrights and helping researchers in Filing for Grant and Publishing Patents/Copyrights.</li> <li>• Setting up Research Clubs.</li> <li>• Maintaining a Database of researchers of the Faculties/Departments/Colleges/Schools including information about viz., Research Publications, Books and Book Chapters, Patents, Copyrights, Conference Presentations,</li> <li>• Invited Talks, Expert Talks, Research Projects, Other Financial Support Received, Awards, Recognitions, Fellowships, Collaborations, Exchange Visits, etc.</li> <li>• Conducting Seminars/Workshops on Research Methodology, IPR, Entrepreneurship, Skill Development, etc.</li> <li>• Creating Research Repository at the HEIs</li> </ul>	

Sr. No.	Goals of Implementation of NEP for building Research Culture	Action Plan (Strategies to meet the Goal)	Timeline
02	<ul style="list-style-type: none"> <li>• To Institutionalise Liaising mechanism for Academia-Industry Collaborations and Interactions.</li> <li>• To Institutionalise Technology Transfer Processes, Procedures, and necessary documents for Technology Transfer</li> </ul>	<ul style="list-style-type: none"> <li>• To Establish Research Consultancy Cell (RCC)</li> <li>• To Establish Technology Transfer Cell (TTC)</li> </ul>	<ul style="list-style-type: none"> <li>• Short-Term (02 Years)</li> </ul>

### Operational Details

- Formulating the Consultancy Policy and Guidelines for undertaking Research and Consultancy activities in HEIs.
- Facilitating on behalf of HEIs, Coordination of Administration, Managerial, Liaison, Monitoring, etc. of In-House & Sponsored Research and Consultancy Assignments.
- RCC will Facilitate and Coordinate:
  - o HEIs Supported Research Projects;
  - o Sponsored Industrial Research Projects ;
  - o Industrial Consultancy Projects ; and
  - o Intellectual Property (Patents, Copyrights, etc.)
- Initiating closer linkages and promoting research suited to industry needs, and consultancy assignments.
- Encouraging faculty members in the HEIs to submit research projects and to enter into MOUs and Agreements with various industrial and research organisations in different fields and sectors to promote various forms of interactions such as
  - o Industry-University Exchanges
    - i Visiting faculty from industry
    - ii Training Programmes/Short-term Assignments to the faculty members in industries
    - iii Joint industrial projects for faculty
    - iv Participation of Industrial Experts in Curriculum Design
  - o Industrial Research & Consultancy
    - i Sponsored Industrial Research
    - ii Use of Industrial Labs by HEIs
    - iii Use of Specialised Database/Lab Equipment of HEIs
    - iv Solutions for Field Problems
    - v Creation of collaborative Labs/Testing Centre at HEIs
    - vi Research Fellowships' Support
  - o Intellectual Property (Patents, Copyrights, etc.)

To encourage, safeguard and manage Intellectual property according to Intellectual Property policy (IP Policy) of the HEIs relating to Inventions (Patents, Design, Trademark, Layout Diversity etc.) and Expressions (Copyright, various forms of expressions and related rights).
- Facilitating Commercialisation of the technology developed by the faculty members of the HEIs.
- Acting as a link between the Inventor(s) of the HEIs and the Industry/consultant for the Transfer of Technology.
- Motivating the faculty members to undertake research that can be commercialised due to its relevance to societal needs.
- Maintaining regular interaction between local industries and HEIs to identify the problems faced by these industries.
- Taking care of Legal and Financial Aspects of Technology Transfer.
- Improving the Standards of the research matching the levels needed by the industry.
- Facilitating, Encouraging, Promoting, and Safeguarding Scientific Investigation and Research in HEIs.
- Making the Inventor(s) of IP aware of the applicable laws and rules for ensuring their compliance.
- Promoting, Facilitating, and Providing incentives to the Inventor(s) for taking initiatives to transfer IP to the Public.
- Enabling the HEIs for making beneficial use of developed IP with the maximum possible benefits of the Inventors, the HEIs, and the society at large.
- Promoting Startups and Innovation.
- Establishing Incubation Centres, Tinkering Labs in the HEIs.
- Elucidating necessary information to Transfer Technology from R&D to actual manufacturing by sorting out the information obtained during R&D.
- To make industry aware of the research, which is being carried out in the HEIs, with potential to be translated into a Product/Service.

Sr. No.	Goals of Implementation of NEP for building Research Culture	Action Plan (Strategies to meet the Goal)	Timeline
03	<ul style="list-style-type: none"> <li>To build Research Exposure among UG Students, PG Students, and PhD Scholars.</li> <li>To build Research Exposure among UG Students, PG Students, and PhD Scholars towards Industrial Research and research related to societal issues.</li> </ul>	<ul style="list-style-type: none"> <li>Establishing</li> <li>Research Internships.</li> <li>Introducing Research</li> <li>Assistantships and Teaching Assistantships</li> <li>Attracting Exchange Research Scholars (UG, PG and PhD) to the HEIs.</li> </ul>	<ul style="list-style-type: none"> <li>Short-Term to Mid-term (2-5 Years)</li> </ul>

Operational Details			
<ul style="list-style-type: none"> <li>Setting up Centres of Excellence(s) in the</li> <li>HEIs.</li> <li>Developing state-of-the-art experimental facilities at the HEIs.</li> <li>Creating Central Instrumentation facilities in HEIs.</li> <li>Collaborating with leading researchers from across the globe.</li> <li>Exposure to state-of-the art facilities and equipment.</li> <li>Exposure to cutting-edge research labs across India and the world</li> <li>Exposure to flagship programmes of the State and Central Governments like Swasth Bharath, Swachh Bharath, Digital India and Make in India</li> <li>Identifying areas where Research Assistantships and Teaching Assistantships can result in high-quality research.</li> <li>Generating financial resources for Research</li> <li>Assistantships and Teaching Assistantships</li> <li>Enabling UG and PG students to carry out research in association with various research groups of the HEIs.</li> <li>Enabling PG and PhD Students to assist their supervisors in the teaching and research process, including the writing of research proposals, conduction of tutorials, evaluation of term papers, etc.</li> </ul>			

Sr. No.	Goals of Implementation of NEP for building Research Culture	Action Plan (Strategies to meet the Goal)	Timeline
04	<ul style="list-style-type: none"> <li>To Motivate Faculty Members and Students to carry out research in Emerging, Disruptive, and Applied Areas.</li> <li>To produce high-quality, highly visible, relevant research output</li> </ul>	<ul style="list-style-type: none"> <li>Incentivisation of Research especially in Emerging and Disruptive Areas.</li> </ul>	<ul style="list-style-type: none"> <li>Short-Term To Mid-Term (2-5 Years)</li> </ul>

Operational Details			
<ul style="list-style-type: none"> <li>• Identifying Thrust Areas in emerging and disruptive fields based on the expertise available in the HEIs.</li> <li>• Providing incentives to Faculty Members and Students working in emerging and disruptive areas.</li> <li>• Providing financial assistance for high-quality Research Publications.</li> <li>• Providing financial assistance for Patents and Copyrights.</li> <li>• Incentivising Research Collaborations with</li> <li>• Institutions from India and Abroad.</li> <li>• Providing Grants for Collaborative</li> <li>• Research Activities.</li> </ul>			

Sr. No.	Goals of Implementation of NEP for building Research Culture	Action Plan (Strategies to meet the Goal)	Timeline
05	<ul style="list-style-type: none"> <li>• To Establish Research Collaborations between the HEIs and other Institutes, Corporates, and Industries in India and Abroad.</li> <li>• To Collaborate with Academic and Research Institutes for the identification of the common area of interest.</li> </ul>	<ul style="list-style-type: none"> <li>• Instituting Office of Research Partnerships</li> <li>• Instituting</li> <li>• Endowment Chairs.</li> <li>• Instituting Cells for Academic Interactions.</li> </ul>	Mid-Term to Long-Term (5-7 Years)

Operational Details			
<ul style="list-style-type: none"> <li>• Identifying Common Research Areas of interest between HEIs and Collaborating Institutes.</li> <li>• Starting Collaborative Research Programmes with other Universities/Institutes</li> <li>• Initiating Research MoUs.</li> <li>• Initiating Collaborative research supervision of PhD Scholars.</li> <li>• Initiating Exchange/Visiting Researcher/</li> <li>• Visiting Professor Programme.</li> <li>• Establishing Centres of Excellence in the HEIs in Collaboration with other Institutes in India and abroad.</li> <li>• Conducting Collaborative Research</li> <li>• Seminars/Workshops.</li> <li>• Initiating Common Academic Programmes with a strong focus on research.</li> <li>• Initiating Exchange Programmes between the HEIs and Institutions in India and abroad</li> <li>• Starting Twinning Programmes between the HEIs in India and Abroad.</li> <li>• Introducing Sandwich Programmes between the HEIs and Institutes in India and Abroad.</li> </ul>			

Sr. No.	Goals of Implementation of NEP for building Research Culture	Action Plan (Strategies to meet the Goal)	Timeline
06	<ul style="list-style-type: none"> <li>• To Accelerate</li> <li>• Sponsored Research</li> </ul>	<ul style="list-style-type: none"> <li>• Focusing on Deliverable Outcome of Sponsored Research Projects.</li> <li>• Conducting research in socially relevant areas leading to Product/Service Development.</li> </ul>	• Mid-Term to Long-Term (5-7 Years)

Operational Details	
<ul style="list-style-type: none"> <li>• Collaborating with Research Funding</li> <li>• Agencies for Identification of Thrust Areas.</li> <li>• Conducting Regular Training Programmes for Faculty Members, Research Scholars, and Students in drawing up and submission of Research Project Proposals.</li> <li>• Conducting Training/Information Sessions by funding agencies</li> <li>• Patenting of Developed Ideas/Products/</li> <li>• Services.</li> </ul>	

Sr. No.	Goals of Implementation of NEP for building Research Culture	Action Plan (Strategies to meet the Goal)	Timeline
07	<ul style="list-style-type: none"> <li>• To make Faculty Members and Students in the HEI aware about the various Professional Associations/ Organisations in their area of research.</li> </ul>	<ul style="list-style-type: none"> <li>• Interacting with Professional Associations/ Organisations in various areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Short-Term to Mid-Term (2-5 Years)</li> </ul>

Operational Details	
<ul style="list-style-type: none"> <li>• Starting Chapters of Professional Associations/Organisations in the HEIs.</li> <li>• Focusing on Memberships of Professional Associations/Organisations.</li> <li>• Conducting of Research Programmes in Collaboration with Professional Associations/ Organisations.</li> </ul>	

Sr. No.	Goals of Implementation of NEP for building Research Culture	Action Plan (Strategies to meet the Goal)	Timeline
08	<ul style="list-style-type: none"> <li>• To Make Faculty Members and Students in the HEIs aware of the various Ethical Issues in Research.</li> </ul>	<ul style="list-style-type: none"> <li>• Instituting the Office of Research Ethics and Integrity (OREI)</li> </ul>	<ul style="list-style-type: none"> <li>• Short-Term to Mid-Term (2-5 Years)</li> </ul>

Operational Details	
<ul style="list-style-type: none"> <li>• Forming Policies on Ethics and Integrity in Research.</li> <li>• Use of honest and verifiable methods in proposing, performing, and evaluating research.</li> <li>• Reporting research results with particular attention to adherence to rules, regulations, and guidelines.</li> <li>• Following commonly accepted professional codes or norms.</li> <li>• Creating awareness about plagiarism in reporting of research results.</li> <li>• Institutionalising OREI as the entity responsible for the implementation of policies and guidelines of Ethics and Integrity in research.</li> <li>• Preparing Research Handbook of the HEIs</li> </ul>	



**Note:**

The concerned HEIs should above all also must consider its domain strength, vision and mission statements and is expected to undertake SWOC Analysis to decide on the timeline that is ST (Short-Term), MT (Mid-Term) and LT (Long-Term) for time bound implementation of operational efforts for preparation of action plan for implementation of the NEP–2020.

## CONCLUDING REMARKS

The NEP–2020 has emphasised upon adopting creative curricular structures to enable imaginative blends of disciplines for study and research with open and flexible multiple entry and exit points with a perspective and perceptual shift for life-long learning. It emphasises on career counselling to recognise interest and talent of students for promoting research in HEIs, introduction of research internships especially in the under-graduate academic curriculum, faculty career management systems with due emphasis on research.

It aims to build and transform research groups or research communities to enable them for undertaking multidisciplinary research, and also to improve and increase efficiency, effectiveness and productivity of research output. One of the core objectives of the NEP is about generating and sharing ideas that will be widely applicable in real-life settings. India has massive potential to enrich the knowledge eco-system. However, the consensus is that the quality of research is far from reasonable.

The NRF is expected to create and build research ecosystem in India with strategic focus on recognised thrust areas of our national priorities without duplication of efforts and expenditure. It has become evident that in case of experimental sciences, substantial part of research funding account for laboratory and other experimental equipment, operating supplies such as chemicals and other substances, etc. whereas in case of the social sciences, computational facilities and manpower requirement are crucial for conduct of research in HEIs. It calls for a paradigm shift in strategic approach and policy perspective and procedural compliances of the NRF in allocation of research funding

which would directly influence research output of HEIs in future. The NRF also needs to adopt a soft approach in providing research grants to doctoral students and postdoctoral fellows alike western countries. The collaborative research culture in all universities and HEIs should include the behaviours, values, expectations, attitudes and norms of researchers that decides and influences different ways and the processes in carrying out set of research activities. Building and promoting collaborative research culture shall require positive support, participation, commitment and engagement of researchers and above all faculty members or teachers of the HEIs. Open communication and discussions among groups of researchers across different HEIs on sharing of his or experiences concerning success and failure in conduct of research activities and research outcome would not only supports in building research culture but it would be significantly helpful in building respect and trust amongst various research groups. Continual career counselling, coaching , and mentoring too is crucial in building research culture in HEIs. The HEIs should continuously stay connected with the research groups and statutory bodies for periodically review of its policies, procedures, guidelines as well as standard operating procedures (SOPs) to enhance and strengthen collaborative research culture of HEIs. For sustaining enthusiasm of researchers, it is important that HEIs regularly organise training and capacity building programmes and research workshops and presentations, workshops and panel discussions, research summits across different departments to learn from each other their 'Best Practices' to look for impactful and innovative ways to build and sustain positive collaborative research culture in HEIs.

The need of the hour is to focus on developing collaborative research culture through strategic and innovative use of capabilities, capacities, and potential of researchers to build India as global superpower in the 21st century. Research and innovation need to become relevant and socially significant and therefore building collaborative research culture for achieving goals of the NEP–2020 with striving for excellence in research with strategic and time bound implementation of the NEP–2020 is highly essential in near future.

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# NATIONAL EDUCATION POLICY–2020 FRAMEWORK TO IMPLEMENT ENTREPRENEURSHIP EDUCATION

Balvinder Shukla | Anupam Narula | R Sujatha

*The new facet of entrepreneurship includes an innovative way of thinking, openness to new experiences, assessing passion for ownership, persuasiveness, and value creation for society. If each student is developed with an entrepreneurial mindset, it shall make them self-reliant and self-confident. They will be ambassadors to resolve their local and regional problems with innovative ideas, solutions, and sustainable business models. To help Generation Z to pursue Entrepreneurial passion and become job creators, New National Education Policy–2020 (NEP) has set a roadmap for Higher Educational Institutions (HEIs). The present paper aims to discuss the “why” and “what” of Entrepreneurship Education: Why Entrepreneurship Education has become so important today both for Generation Z and for the country? What should Entrepreneurship Education be to maximise its impact to transform Higher Education in India?*

## PRELUDE

The discourse of work life of Generation Z has made them frame a different perspective about their jobs and careers. They had always seen their parents investing all their time, effort, and life years of hard work with loyalty to their organisations with great expectations of career growth and security in return. The sojourn of the pandemic made the youngsters also witness fear, anxiety, and insecurities in their parents’ work lives. They are observing in dismay that corporations are downsizing its workforce and drastically rewriting the contracts of jobs. In response to the rapidly changing business landscape, the generation Z is rewriting and defining its entrepreneurial

intentions. Industry 4.0 and beyond had opened vast opportunities to the emerging markets with economic benefits and a new vision to socialism and market economy. The government in the past decade as focused to create an Entrepreneurial Ecosystem and has been supporting youth enterprises encouraging them to leverage their entrepreneurial skill sets and knowledge to become self-employed, solo-employed creating new ventures. This has acted as a catalyst for entrepreneurship as a career option for graduands across the nation. To help the Generation Z to pursue this Entrepreneurial passion and become job creator, New National Education Policy–2020 (NEP) has set a roadmap for Higher Educational Institutions (HEIs) with its emphasis on holistic development of students through multidisciplinary education and vocational training.

### THE ENTREPRENEURSHIP MIDSET: BEGINNING OF A NEW ERA

In this background, HEIs and universities of India have been bestowed with a great responsibility to prepare young generations to become more self-reliant, independent, and sustainable. They need to bridge the gap between perceived desirability to become an entrepreneur and feasibility of creation of a new venture. The education offered by HEIs must enable an individual to study one or more specialised areas of interest at a deep level, and develop character, ethical values, intellectual curiosity, scientific temper, risk-taking ability, creativity, and spirit of service towards the social community. It must prepare Generation Z students for more meaningful and satisfying lives in terms of successful careers which in turn adds economic, social, and cultural value to the society. The channeling of Generation Z from “taking a job” that someone else has already created to “creating jobs” by conceiving and starting new businesses is aligned with the *Atmanirbhar Bharat*, which is the “*Abhiyan*” of “Self-Reliant India Mission”, conceived by Hon’ble Prime Minister of India, Shri Narendra Modi.

The belief that entrepreneurs are born and entrepreneurship is for the rich doesn’t hold true anymore. Research studies suggest that

investing in entrepreneurship education can create an Entrepreneurial mindset. Eventually, it translates into developing the entrepreneurial orientation among Generation Z. This entrepreneurship awareness is the seed for a growing number of start-ups in India. According to *Special Report: A Global Perspective on Entrepreneurship Education and Training, GEM, 2008*, Entrepreneurship education is broadly defined as, “The building of knowledge and skills for the purpose of entrepreneurship, generally as part of recognised education programs at primary, secondary or tertiary-level educational institutions.” Entrepreneurial skills include ‘*soft*’ skills, such as persistence, teamwork, communication, values, and ethical boundaries, commitment to the organisation, optimism, leadership, decision making, networking, self-confidence on the one hand and ‘*enabling*’ skills on the other, such as basic business knowledge, business planning, financial literacy, technical know-how and managerial skills. An effective entrepreneurship education policy is a prerequisite for any economy aiming to develop entrepreneurial skills among its people. However, the broader objective is to increase the number of individuals starting their ventures and develop an entrepreneurial culture to fulfill the socioeconomic objectives of a nation.

Entrepreneurship as a key driver of economic growth and the backbone of economic development has largely inspired the development of entrepreneurship as a field of study in HEIs and universities across the globe (*Arthur et al., 2012*). Lighting the flame of the entrepreneurial spirit empowers nations and peoples with ‘the knowledge and ability to fish, rather than just giving them a fish’ (*Timmons, 1994*).

Researchers have found that entrepreneurial tendencies and behaviour are strongly affected by entrepreneurship education (*Sexton and Bowman, 1983; Kolvereid and Moen, 1997; and Henderson and Robertson, 1999*). Many research studies reveal that entrepreneurs of developed countries show higher success rates only when they have attained higher levels of education (*Lee, 1997; Foley and Griffith, 1998; and Leffler and Svedberg, 2005*) and such effect is more pronounced when higher education is coupled with experience (*Scott et al., 1998*). *Karanja et al. (2016)* state that the entrepreneurial curriculum significantly contributes to influencing an entrepreneurial mindset



among students subjected to entrepreneurship education. We have also observed that, at present, attainment of higher education in a general form is more common than education specifically targeted towards entrepreneurship.

Are HEIs and Universities in India Ready to Incorporate Specialised Entrepreneurship Courses in their Curriculum Framework?

From Education 1.0 to Education 3.0, HEIs and universities of India have prepared students with analytical skills, i.e., on the ‘Knowledge Component’, which includes facts, frameworks, and theories, but the industry also reports that there is a lack of ‘Practice Component’ in the academic curriculum frameworks. If we need job creators for the future, ‘enabling skills’ and ‘soft skills’ are needed to enable Generation Z to pursue creative tasks and provide new solutions to complex professional, personal, and societal problems. This calls for new courses and pedagogies in entrepreneurship education that nurtures entrepreneurial culture.

We understand entrepreneurship as a process of starting or running one’s own venture. The new facet of Entrepreneurship includes an innovative way of thinking, openness to new experiences, assessing passion for ownership, persuasiveness, and value creation for society. If each student is developed with an entrepreneurial mindset, it shall make them self-reliant and self-confident. They will be ambassadors to resolve their local and regional problems with innovative ideas, solutions, and sustainable business models.

NEP–2020 has emphasised that education must move towards less content and more experiential learning to create positive outcomes, including increased creativity and innovation, critical thinking, problem-solving abilities, teamwork, communication skills, and more in-depth learning of curricula across fields at all levels. Entrepreneurship Education shall be an enabler to bridge the gap between the current state of student learning outcomes and the vision of NEP–2020. Education must build character, and enable learners to be ethical, rational, compassionate, and caring, while at the same time prepare them for gainful, fulfilling employment.

The Association to Advance Collegiate Schools of Business (AACSB) has encouraged its accredited colleges to deliberately include coverage of specific topics in undergraduate business curricula by revising their standards. AACSB 2010 specifically cited inclusions in the undergraduate business curriculum include knowledge and skills in the areas of communications, ethics, analytical skills, information technology, multicultural and diversity understanding, creativity and innovation, and reflective thinking skills and AACSB 2020 highlights the influence of education in contribution to the society (Social Impact).

Entrepreneurship education, innovation/creativity, and technology were chosen as a group due to the critical relationship they have with one another. Although all AACSB accredited business schools (and probably those not accredited as well) have included some type of course related to Information Technology, it is believed that there is a wide scope to enhance student learning outcomes by developing their entrepreneurial skills. Technology is often a source of entrepreneurial opportunity, which is the result of the innovative/creative process. Likewise, entrepreneurial thinking sometimes results in technological innovations, and the creative/innovative process can result in both new technology and/or entrepreneurial businesses.

## ENTREPRENEURIAL EDUCATION

Entrepreneurial education is the process of developing students in a manner that provides them with an enhanced capacity to generate ideas, as well as the behaviours, attributes, and competencies to make them happen. It extends beyond knowledge acquisition to a wide range of emotional, intellectual, social, cultural, and practical behaviours, attributes, and competencies, and is appropriate for all students. Entrepreneurial education aims to encourage graduates with awareness, an open mindset, and proactivity. flexibility, resilience, and capability to generate original ideas in response to identified needs, opportunities, and shortfalls, and the ability to act on them in volatile, uncertain, complex, and ambiguous (VUCA) circumstances. In short, it means having an idea and making it happen.

Entrepreneurial capacity development is not simply linked to employment, but it also helps to address some of society's toughest challenges as stated by the United Nations Sustainable Development Goals (SDGs). Many of the world's governments, think-tanks, non-governmental, and international organisations now look towards entrepreneurship as a key part of the solution to ending poverty and social inequity, promoting women's empowerment, and implementing business solutions to the world's societal challenges.

## ENTREPRENEURSHIP COURSES

Unfortunately, what content should lie at the core of entrepreneurship education has not kept pace with the compelling and accelerating cases emerging for entrepreneurship education, especially in the HEIs and universities of India. Many premier business schools' curricula have included entrepreneurship in their business management education in their well-intentioned attempts to tackle the more poorly understood and difficult to describe real entrepreneurship education. True entrepreneurship education is characterised by three attributes: the first is the identification or recognition of market opportunity and the generation of a business idea (product or service) to address the opportunity; the second is the arrangement and commitment of resources in the face of risk to pursue the opportunity; and third is the creation of an operating business organisation to implement the opportunity-motivated business idea.

Entrepreneurship courses and focused projects are excellent tools to prepare students for changing environments of Industry 4.0 and beyond to develop all capacities of human beings' intellectual, aesthetic, social, physical, emotional, and moral capacities in an integrated manner to lead a rewarding and self-determined professional life which is emphasised in NEP–2020. It shall also prepare students with the life skills to face the present-day professional and social challenges. It can have a significant impact for the academic institution through graduate start-ups that build credibility for the institution, and through new external relationships with growth-orientated organisations. These

activities combine to support the delivery of multiple strategies for the higher education sector: Teaching and Learning; Research and Impact; and Knowledge Exchange and Engagement.

According to the Entrepreneurship Policy Framework suggested by UNCTAD, entrepreneurship education at the primary school level must focus on soft skills, including entrepreneurship awareness and the development of entrepreneurial behaviours (e.g., risk-taking, teamwork skills, opportunity-seeking). There is no single technical course on entrepreneurship at such a young age. At the secondary level, students need to be informed about self-employment as part of career development and mentored about their choices. Students also need to learn basic business skills, such as economics, marketing, and basic local commercial law. The implementation of extra-curricular activities, including visits to business enterprises to understand the world of work has yielded good results in some countries. It is important to expose students to entrepreneurship education before they choose their specialisation courses in the university (*UNCTAD, 2012*).

The higher education system in India exhibits an increasing trend to develop entrepreneurial capabilities among students by offering entrepreneurship as a core course in business education. A full-time entrepreneurship basic course on Entrepreneurship and New Venture creation is being offered by many premier institutions in India. However, specialised entrepreneurship courses are only being offered in very few international HEIs and universities of the world such as:

- (a) Entrepreneurial and Innovation Strategy
- (b) Managing the Future Skill Sets of Work
- (c) Start-up Founders' Practicum
- (d) Entrepreneurial Sales & Marketing
- (e) Entrepreneurship and Technology Ventures
- (f) Commercial Law & Governance Principles
- (g) New Business Models and Pitching/Making Markets (M2)

- (h) Financial Management of SME's
- (i) Entrepreneurial Investing—Risk, Return & Impact
- (j) Entrepreneurship through Acquisition
- (k) Social Entrepreneurship

Many new types of specialised entrepreneurship courses are evolving in the world which include:

**Green Entrepreneurship:** It is where environmental problems are explored to result in a net positive impact on the natural environment using sustainable processes.

**Digital Entrepreneurship:** It is where digital products and services that are created are marketed, delivered, and supported online.

**Intrapreneurship:** It is the application of enterprise behaviours, attributes, and skills within an existing micro or small business, corporate or public-sector organisation.

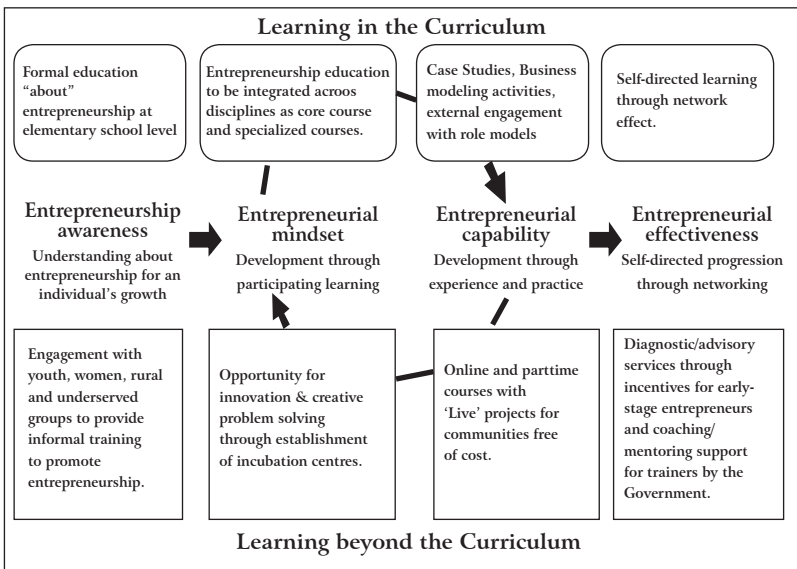
Initiatives are being taken by Indian HEIs and universities to help the students gain the necessary skills and confidence to translate their business ideas into real business opportunities. Incubation centers and Acceleration programmes are also growing in number, which not only help the budding start-ups with basic business skills but also offers complete hand holding by providing services like co-working space, access to markets and finance, networking opportunities, and helps with regulatory compliance. The entrepreneurship education ecosystem in India has effectively promoted the concept of Faculty-Student Collaboration which brings together faculty members and students to work on business ideas. IITs lead this collaborative trend across India including Mumbai, Delhi, Chennai, Kharagpur, and Hyderabad. The well-reputed HEIs both state funded as well as leading private universities play a significant role in creating a vibrant startup ecosystem in India by promoting innovative entrepreneurial activities in their incubation facilities/centers.

## FRAMEWORK FOR EFFECTIVE IMPLEMENTATION OF ENTREPRENEURSHIP EDUCATION IN INDIA

Entrepreneurship education aims to develop an entrepreneurial mindset and business acumen among students. Nevertheless, entrepreneurial skills can be inculcated among individuals at the elementary school level, which will subject an individual to entrepreneurship at an early stage. The educational experience can go a long way in improving the socio-economic situation of individuals and enhancing entrepreneurial tendencies, specifically in developing countries like India.

To promote entrepreneurship, the authors propose implementation of entrepreneurship education in HEI’s as in figure-1. There are two dimensions to approach entrepreneurship education by HEIs and universities: one, entrepreneurship learning within the curriculum and two, entrepreneurship beyond the curriculum. In both dimensions, HEIs and universities will be an enabler to create Entrepreneurship Awareness, Entrepreneurial Mindset, Entrepreneurial Capability, and Entrepreneurial Effectiveness.

FIGURE 1 FRAMEWORK FOR IMPLEMENTATION OF ENTERPRENEURSHIP EDUCATION



To inculcate learning within the curriculum, entrepreneurship education should not be offered in silos. In most of the HEIs, a core course in Entrepreneurship and New Venture Creation is offered to Business Management students or a basic course on Entrepreneurship is offered to students in specialised Science, Engineering, and Technology programmes with core emphasis on design projects or innovation. It is observed that management students are good in functional skills and engineering students are good in product and technological innovation. There is an opportunity for HEIs and universities to promote multidisciplinary education within the framework of NEP–2020. Each course offered in any of the disciplines can incorporate professional and skill development activities that are related to entrepreneurial competency.

An effective entrepreneurship curriculum should be developed, that not only focuses on teaching basic entrepreneurial skills but also encourages students gain knowledge on disruptive technologies and entrepreneurial opportunities even through their specialised courses with experiential learning techniques and customised sector-oriented training programmes. For example, a student of Architecture and Design shall be encouraged towards idea generation, design thinking and to prepare a business plan as part of their assessment component in which higher order thinking skills can be inculcated among students. This way, an entrepreneurial mindset is created among Generation Z. The entrepreneurship curriculum should focus on local case studies, enable partnering with businesses, and access local role models to acquaint students with technological and other important aspects related to business. Self-directed learning should be developed to bring together committed entrepreneurs under one platform, which may further enable effective entrepreneurship through networking. It equips students to generate ideas and inculcates problem solving skills, critical thinking skills, creativity, higher order cognitive skills, persuasion, resilience, and soft skills. This will ultimately facilitate students to aspire to become an entrepreneur or enhance their entrepreneurial capacity by creating a portfolio of careers, as large organisations and corporations all look for creative, innovative, risk-taking ‘Intrapreneurs’ to join them.

Learning beyond the curriculum is to gain knowledge outside a the formal education system. HEIs and universities can conduct training programs targeting specific segments of the population, including youth, women, rural and underserved groups to promote entrepreneurial spirit and inculcate entrepreneurial skills across communities. There are different skill councils promoting solo employment with their target training programmes.

At the HEI and university levels, more efforts should be made in establishing and developing incubation centers where worthy business ideas can be accepted and incubated. It should encourage the local community to have access to incubation facilities. The MHRD has greatly contributed its efforts in building Institution Innovation Cells and the Government of India had provided various support to establish incubators within HEIs and universities to develop their network of mentors available to provide expert guidance to start-ups. Online and part-time training courses should be conducted to target those aspiring entrepreneurs who may find it difficult to undertake a regular course. Awareness should be created about the online learning resources available to aspiring entrepreneurs free of cost. The government should encourage the collaboration of private HEIs and universities with entrepreneurship development centers and institutions involved in entrepreneurship education and provide diagnostic and advisory services through incentives for early-stage entrepreneurs. Furthermore, the government should invest in coaching and mentoring for the teachers and trainers imparting entrepreneurship education, necessary for meaningful and result-oriented entrepreneurship outcomes.

## CONCLUSION

India's economic growth will hinge on the ability to create new jobs through entrepreneurship. Successful entrepreneurship, in turn, will require well-trained aspiring entrepreneurs willing to take the helm of venture creation. Effective initiatives in entrepreneurship education will be required for expanding the flow of potential leaders from the school systems with the passion and the multiple skills needed, not



only to give birth to the risky entrepreneurial enterprise but also to guide it successfully through the initial growth phase.

To achieve these goals, the Indian Higher Education Institutions and universities need to foster the development and infusion of entrepreneurship education curricula that explicitly target and enable Generation Z to successfully become the next generation of entrepreneurs. In so doing, it will ensure that those youths whose value system is consistent with entrepreneurship, who have the predisposition for entrepreneurial behavior, and who have the dream of embarking on the entrepreneurship process as the initiator, will have access to the knowledge, skills, and personal experiences to maximise their probability of success. This will encourage the personal growth of all youngsters who will develop a balanced intellectual and emotional quotient to face the life as well as professional challenges of industry 4.0 and beyond.

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# PRAGMATIC EDUCATION POLICY IMPLEMENTATION STRATEGIES FOR RESEARCH AND TECHNOLOGY

Y S Siddegowda

*In today's world, research and innovation constitute the neo-quantum of the academic strength of a nation. India intends to impact global academia through remarkable contributions to research by expanding the frontiers of human intellect. Hence, it is pivotal to develop a robust system that fosters research and innovation. It is predicted that India will be the largest economy in the world by 2030–2032 with an estimated GDP of 9 trillion dollars. This is in lieu of Hon'ble Prime Minister's recent call on leveraging the Fourth Industrial Revolution to take India to new heights. Taking things forward, the comprehensive National Education Policy–2020 has been introduced. It seeks to bring about a paradigm shift through its transformational reforms in education.*

## PRELUDE

It is predicted that India will be the largest economy in the world by 2030–2032 with an estimated GDP of 9 trillion dollars. It is evident that the 9 trillion dollar economy will be driven by knowledge resources and not only by natural resources of the country. This is in lieu of with hon'ble Prime Minister's recent call on leveraging the Fourth Industrial Revolution to take India to new heights. Taking things forward, the comprehensive National Education Policy–2020 has been introduced. This policy is a watershed moment for the Indian Education System, which is bold, comprehensive and envisages large scale transformational well-reasoned reforms.

A competently written compendium, the policy overhauls the existing education system by bringing about a pragmatic shift

in its content. In the arena of Higher Education, NEP–2020 has outlined an ambitious task of making education more holistic, flexible, and multidisciplinary, creating multi-entry and exit points in a four-year degree programme, catalysing research, improving faculty support and encouraging internationalisation. It seeks to bring about a paradigm shift through its transformational reforms in education on the foundational pillars of Access, Equity, Quality, Affordability and Accountability, and is aligned with the 2030 Agenda for Sustainable Development, which aims to transform India into a vibrant knowledge society and global knowledge superpower. For our massive human resource potential to be realised and tapped needs the effective implementation of this dynamic policy. It is heartening that the policy considers education as a public good and the public education system is the foundation of a vibrant democratic society. It is public education that contributes to the building of nations, culturally, and technologically and the building of a humane society.

The underlying aims of higher education are to develop good, thoughtful, well-rounded, and creative individuals. Higher education institutions will offer holistic and multidisciplinary quality education that will enable students to study one or more specialised areas of interest at a deep level, and also develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, the spirit of service, and 21st century capabilities across a range of disciplines including sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects.

Indian higher education is the second largest educational system in the world, and has a great potential to compete with global universities. In order to realise the contributions of higher education towards nation building, a transformative and innovative approach would be required across all verticals of higher education—from curricula and pedagogy to the use of technology to partnerships, governance and funding. Building rapid progress for future higher education would require a committed and concerted effort from all stakeholders involved, i.e., academia, industry, and the government.

For capital human capital theory, higher education is an effective tool to develop science and technological capabilities that are required for a standard of living in a global knowledge economy (*Ding and Zeng, 2015*). The world is moving from manufacturing-based economies towards knowledge-based economies that rely heavily on scientific research and a trained workforce. Nations no longer compete for industrial capacity or access to natural resources; it is now about skilled workers, intellectual property and knowledge.

### **SIGNIFICANCE OF RESEARCH AND ITS IMPLEMENTATION**

In today's world, research and innovation constitute the neo-quantum of the academic strength of a nation. India intends to impact global academia through remarkable contributions in research by expanding the frontiers of human intellect. Hence, it is pivotal to develop a robust system that fosters research and innovation. In this direction, NEP-2020 has proposed the National Research Foundation (NRF) to facilitate research, which will give an impetus to path-breaking research activities. A vibrant research and innovation culture across higher education institutions is of great significance. Research labs and other research organisations are the backbones for innovations in a technology driven competitive world. NRF would play a very crucial role in creating a culture of high quality research and building capacity in disciplines that are critical. There is an urgent need for a significant expansion of research capabilities and output across disciplines.

### **SUGGESTIONS FOR IMPLEMENTATION OF RESEARCH AND DEVELOPMENT THROUGH NRF**

NRF should be legislated as the key central funding agency to govern and regulate all research activities. NRF needs to be competitively funded for all disciplines to successfully carry out research through close linkages with government agencies as well as industry and private/philanthropic organisations in India. NRF should strive to play a major role in funds by bringing all the funding agencies on to a single platform. It should form partnerships to harness the

collective intelligence of networks and the NRF should advocate an audit and ranking of research at the university level that will act as an impetus for higher educational institutes to bring about quality research. Encouragement should be given to collaborations – both national and international – through research conferences and exchange programs to enhance productive research.

It is of paramount importance that both the central and state governments allot a fixed fund for research in the budget as a regular budgetary commitment. In order for research to be given due importance and recognition, the research and innovation investment, which currently stands at 0.8 percent of GDP, needs to be enhanced to at least 2 percent of GDP. To attract funds, universities should secure intellectual property from their research. It should provide competitive access to government research grants through a merit-based system to incentivise and support Research and Development. It is necessary to note that there should be role clarity between NRF and other funding agencies such as Department of Science & Technology (DST), Department of Atomic Energy, Indian Council of Agricultural Research, Indian Council of Medical Research, Direct Benefit Transfer, Indian Council of Historical Research, University Grants Commission, etc. in the allocation of funds and monitoring of research. The funding bodies should be committed to embedding quality and diversity of research in all fields.

It would be pertinent to mention that the projects funded by NRF should strictly adhere to create a national research credit bank for all those it funds, and monitor the output of their research. To foster research publications, integrated nation digital library membership should be made compulsory in all HEI's by converting their libraries into digital libraries and there should be access to books, periodicals, journals, and patents. This will aid in multiple subscriptions of library resources being eliminated and thereby decrease government expenditure on library resources.

In order to maintain sustainable quality, college faculty should be encouraged to publish open access scholarly research papers with copyright certificates from the government of India and

more significantly patent submissions. As there is a dearth of research guides, services of retired professors in this direction could be beneficial, and highly qualified and proven researchers like them should head various research agencies. NRF should act as a liaison between researchers and industry, which will further aid in policy making. Students should be conducting research, based on industry internships, and publish scholarly papers and own patents during their degree education. It would be edifying to note that all universities should start their own digital publication units in order to bring out high quality research at par with global indexing agencies.

## SIGNIFICANCE OF RESEARCH UNIVERSITIES

Research is a tool for building knowledge and facilitating learning. It is an essential component in generating thorough knowledge in any particular field. Research universities have the capacity to produce powerful academic structures that make it possible for nations to compete in a sophisticated, global, and in-depth knowledge economy. These universities are intrinsic to the success of any contemporary, knowledge-based economy. Our research universities should be nationally and internationally recognised for the quality of their research and the breadth of their research outputs and create an environment that is entirely conducive to scholarly pursuits. The university should hone research on areas of critical importance and represent a perfect choice for international students looking to get involved in world-class research in an innovative, diverse, and welcoming environment. There should be diverse research programs that engage in a complex, global society, instilled with an awareness of issues in sustainability alongside an in-depth understanding of varied cultures and differing international perspectives. A university should be known for its ground-breaking education model, global character, and cross-disciplinary approach to its academics and research. The research university through its high-quality programs and impactful research must seek to expand knowledge through basic and applied research, serving diverse economic, cultural, and societal needs of



its local, state, national and international constituencies. Research universities should overcome the trend of becoming more and more specialised, and instead, try to integrate undergraduate teaching and research to create a true community of scholars. Nobel Prize winners should be associated with research universities for guidance and direction. Research Universities should attract scientists, scholars, and students from around the globe to carry out cutting-edge research and learn from leading authorities. These universities require investment in state-of-the-art facilities. Specialised research infrastructure is the key to the production of quality scientific discoveries. A Research Excellence Framework for assessing the quality of research is essential. It should include all forms of research output that should be assessed on a fair and equal basis, including interdisciplinary and collaborative research.

### **IMPLEMENTATION PATHWAYS FOR RESEARCH INTENSIVE UNIVERSITIES**

Research universities should form regional academic alliances to build enough strength in selected fields to promote participation in global science. There should be a linkage to the global academic system of science and scholarship so as to understand advanced scientific developments, and participate selectively in them. Creation of a differentiated academic system for research universities with diverse missions, structures, and patterns of funding for at least 80 percent of competitive research funds, should be there. Universities too should take the onus for long-term financial sustainability of research through proactive diversification with enterprises including cross-border Consortia, Foundations, and other private sources. At the national level, a Flagship Research University should be established for leadership in higher education. The funding and merger of research universities to provide better economies of scale that could greatly aid in the proper use of funds. Funding for research universities must be available on a sustained basis. Social sciences and humanities should be included alongside the hard sciences; an appropriate mix of funding sources and regulated allocation mechanisms would encourage innovative research ideas. Research universities need

autonomy to shape their own programs, manage their budgets as well as that of the academic community. Faculty should be highly trained, and committed to research and scholarship. Local research universities need to focus on local needs by bringing international scientific trends to bear on local problems and contribute to the development of domestic industry, agriculture, and society. Research universities have the responsibility to disseminate research and analysis in local languages. Research universities provide the skills needed by 21st century economies and societies and reflect the best academic values.

The role of research universities in advancing society and the economy is multi-faceted and highly important. In fact, the importance is so high, that it is crucial for national leaders and decision makers to have a thorough and shared understanding of the functional benefits generated by them.

## INTERNATIONALISATION OF EDUCATION AND MEASURES FOR IMPLEMENTATION

*Vishwaguru* – envisioning India as a global destination for providing premium education at affordable costs – is the right step towards internationalisation of education. The encouragement to high performing Indian universities to set up campuses abroad and enabling selected universities among the top 100 universities in the world to operate in India, is laudable. To start with, the government should ensure only non-profit institutions offering multiple programs to set up their campuses in the country. Measures should be taken to establish an overall policy reform that encompasses the specific courses to be offered, exchange programs, affiliation, international scholarships, international collaboration, funding, and networking activities that are to be taken up. Steps should be taken to synchronise the Indian credit system with international credit systems to enable credit transfer between Indian and international credit systems.

## DIGITAL INFRASTRUCTURE AND ADOPTION OF TECHNOLOGY

Technology is the cornerstone to democratise education and it can create powerful communities. It has played a pivotal role in enabling the shift, especially in cities and towns with high-speed internet connectivity. In the 21st century, knowledge of internet usage is a fundamental human right considered at par with reading and writing. The Policy is vocal about digitalisation in education, but the challenges of disparity between regions, population, classes, delayed infrastructure development, and bandwidth availability should be addressed. The most important element that supports the use of technology in the educational system is the internet. E-learning has become one of the fastest moving trends in education and poses a promising alternative to traditional learning. Knowledge of internet usage is a fundamental aspect that should be inclusive.

The Policy lays emphasis on leveraging the benefits of technology in making the youth future ready. This noble initiative will be successful only if the government works on improving the basic infrastructure that will support digital infrastructure across the country as the majority of the rural institutions lack digital classrooms, remote expertise driven teaching models, and AR/VR tools that are essential to bridge the gap between physical teaching and that of practical learning in laboratories. It has been proposed that the key to the continued viability of institutions of higher education in light of increased competition in the global market place will be their adoption of learning technologies that increase flexibility, access, and convenience (*Smith and Oliver, 2000*).

Technology plays an important role in facilitating learning. It has facilitated many effective educational methodologies such as self-directed, independent, and collaborative learning. It can connect people who are, separated by schedule and location, and might otherwise not be able learn from each other. And it can provide the opportunity of receiving immediate feedback assessment, making learning appear comparatively more achievable than it would without instant feedback. The strategic expansion of the higher education system to increase access to education for all social groups

and geographies through virtual classrooms becomes a reality only when, especially in rural areas, internet connectivity is easily accessible (given the fact that it is nearly non-existent), making digital learning a major challenge even after tremendous growth of ICT overall. This calls for a timely reminder to enhance the use of technology in education to achieve a greater understanding by students across all disciplines.

Research has demonstrated that smartphone applications and the internet are introducing a new degree of responsiveness and flexibility within the educational process. This response is facilitated by the ease with which content can be updated, instruction can be personalised, information can be accessed, information can be distributed, and content can be standardised. (*Rosenberg, 2001 and Cradler, et. al., 2002*).

In order to realise the vision of NEP–2020, there should be experiential learning and industry-academia partnerships. In this context, blended and online learning will be crucial and hence it is important that the government should allocate appropriate funds to develop the digital infrastructure across India. Many students rely on technology for their academic needs; technology contributes to the long-term retention of knowledge and acquisition of skills such as interpersonal communication, psychomotor and cognitive skills within different courses.

We have witnessed tremendous growth in the information and communication technologies that have revolutionised business practices and strategies of entire industries, and the field of higher education is not an exception to this phenomenon. The application of information technologies in the education sector is also referred to as educational technologies.

In the upcoming budget, there should be an allocation of funds to develop digital infrastructure across the nation, especially in rural India. The Government needs to evaluate the ground situation and spend on assets for the long run including smart classrooms, internet connection, and skill up-gradation of teachers in line with NEP–2020. Teachers would also need to adapt to the changing

pedagogy and restructure their teaching methodologies. It has also been pointed out that, by comparison, those with a high level of technology in their teaching may be better at instilling students with a desire to learn and developing critical thinking skills. (*Ritchie and Wiburg, 1994*).

The budget should provide for setting up of research and technology upgradations and accessibility. The private sector should also fund through their own resources or through CSR on research and technology. External commercial borrowing and Foreign Direct Investment (FDI) are essential to boost quality and research. The policy needs to be loud and clear on the guidelines for increasing digital literacy.

## CONCLUSION

In conclusion, NEP–2020 is truly visionary, aspirational, and comprehensive, which is all set to bring about a paradigm shift across all spheres of education. Strategic planning and a larger vision that correlates economic development to transformation in the education sector, particularly in higher education and research, will go a long way in making our nation globally competitive. The newness of the vision shall focus on the genius and capability of our people and our civilisational ethos, create the desired intellectual, economic and social value, and also prepare the roadmap to achieve the vision, aligned with our excellent policy foundation. We look forward earnestly with a sense of pride and hope for its successful implementation.

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**TEACHER EDUCATION, VOCATIONAL EDUCATION  
AND PROFESSIONAL EDUCATION**





# IMPLEMENTATION OF NATIONAL EDUCATION POLICY-2020 IN HIGHER EDUCATION SOME STRATEGIES

Raghunath K Shevgaonkar

*The NEP-2020 envisions India to become a global knowledge powerhouse in the next few decades by giving a special thrust on creating academic leadership and enhancing employability of the university graduates through vocational training. It is trying to make education more inclusive and accessible. However, since implementation of an education policy is a gradual process, for the success of NEP-2020, not only the current government but many successive governments will have to be equally committed. If vocational training is to be integrated with the regular degree programmes, we will have to create an infrastructure for vocational training. For making Indian higher education globally competitive, the universities will have to be free from political influences, and should be academically, administratively and financially autonomous.*

## PRELUDE

After 34 years, India has gotten a new education policy called the National Education Policy-2020 (NEP-2020). The Policy has proposed many transformative reforms in the education system of India. While substantial thrust has been put into redefining the school education, there are recommendations for increasing the gross enrollment ratio in the country and making higher education forward-looking. The Policy envisions India to become a global knowledge powerhouse in the next few decades by giving a special thrust on creating academic leadership and enhancing employability of the university graduates through vocational training. The NEP-2020 has tried to make education

more inclusive and accessible. It has tried to bridge the societal gap that exists due to geographical, economic or other reasons. The Policy has also provided a strong emphasis on holistic development of the country's youth by imparting appropriate knowledge about India's rich culture and heritage.

The NEP–2020 document has received appreciation from a wider section of the society as by and large, the policy seems to be addressing the right issues faced by the Indian education system and therefore can transform it to become globally competitive. However, it may be recalled that many of the NEP–2020 recommendations were made by the previous education policies also but due to their implementation or non-implementation, the education system could not achieve the global stature. The NEP–2020 also faces the same implementation challenge. Since the implementation of an education policy is a gradual process, for the success of NEP–2020, not only the current government but many successive governments will have to be equally committed. Even if we assume the commitment from the Governments, there are certain recommendations that need to be analysed threadbare to understand the challenges of their implementation. In this article, we discuss some of the main issues that require deeper discussion and their possible solutions.

### **MULTIPLE ENTRY MULTIPLE EXIT (MEME) OPTIONS AND INTEGRATION OF VOCATIONAL TRAINING**

NEP–2020 has proposed multiple entry and exit options in a degree programme. For a 3-year degree programme, it is proposed to have exit options after 1st and 2nd years. A student will be given a certificate after 1st year while after 2nd year he/she will be awarded a diploma. It is envisaged that the students with a certificate or a diploma would be able to find a suitable job, which could be something that they desire to do. Students will be allowed to leave the programme with the appropriate certification, which would enable them to return to it in later years if they wish to. The main idea is to allow students to complete their degree programme with flexibility, which is desirable because there is a large section of society where children do not have the luxury to receive financial support for their education from their

parents. On the contrary, many a time the children have to earn not only their living but of their parents and siblings as well. A very large dropout number after primary and secondary schooling is a clear reflection of this. The recommendation of multiple entry multiple exit option in a degree programme, therefore, is highly welcome as it brings inclusiveness in higher education.

While from a societal angle this is a highly commendable move, there are academic as well as financial implementation issues. On the academic front, it needs completely new thinking in programme structuring. The conventional way of structuring a degree programme cannot work with the Multiple Entry Multiple Exit (MEME) scenario. Similarly, institutional planning may require a different approach so that the variability in student numbers due to MEME does not impact the quality of education.

### **Curriculum Design**

One of the important aspects of MEME will be that the curriculum should become modular. After every year, the curriculum should enhance the capability of a student from the employment viewpoint. The 1st year certificate should make a student capable of finding a job with appropriate skills. After the 2nd year, with a diploma, a student should acquire some advanced skills. The 3rd year should give a deeper understanding of the subject to qualify for the degree.

In current degree programmes, the sequence of courses is considered in a comprehensive fashion, i.e., the courses at the elementary level are taught in the first year and the level of courses increases with the years. With this progression, a certificate after the 1<sup>st</sup> year or a diploma after the 2nd year may not make a student employable. In fact, it may not have any value in the market except that it can be used later for resuming the degree programme.

If the objective of the MEME option is to help people acquire some employment while working towards a degree programme, the curriculum should blend vocational courses in the curriculum. The first two years of a degree programme should have about 50 percent vocational courses placed in such a way that the students can find

appropriate employment with the acquired skills. The final year of the degree programme can have only degree level courses. A very wide variety of contemporary vocational courses that can complement or supplement their degree subjects should be made available to the students.

This will be a radical change in the curriculum design. The curriculum pyramid will have to be inverted. The regulator can facilitate the creation of model curricula with the inverted learning pyramid. Even the internship sequence has to be inverted, i.e., more internships to be included in the earlier years of the degree programme rather than later years.

The curriculum design as such lies within the purview of a university. However, some uniformity in exercising the flexibility of entry and exit options and their validity for acquiring a degree will have to be worked out by the regulatory bodies. For example, total number of credits and the percentage of the vocational component in each year of a degree programme should be uniformly decided by the regulator. This will facilitate the students to carry their certificate or diploma from an institution to any other institution of their choice for getting a degree. Of course, this will require a credit transfer policy to be in place (will be discussed later). So, in the new curricular structure, every student will have to be awarded appropriately a certificate or a diploma or a degree. If a student completes the degree programme at one stretch, he/she still will have a certificate and diploma with him/ her, the use of which will be at the discretion of an individual.

The in-depth subject development should be more of a part of the postgraduate programmes.

### **Vocational Training Centres**

At present, the vocational component is totally missing from the degree programmes. Also, the vocational institutes that exist, are mostly outdated. If vocational training is to be integrated with the regular degree programmes, we will have to create an infrastructure for vocational training. It is not financially viable for individual

institutes to create a wide variety of vocational training facilities. In view of this, there is a need to come up with more innovative models for imparting vocational training to the students of a degree programme. This can be done in any of the following ways:

Government creates vocational training centres with state funding that will be shared by a cluster of universities/institutes in the vicinity on a payment basis. There is also a possibility of imparting vocational training in online mode at least for some vocational subjects. Since now the vocational training will be a substantial fraction of the main degree programmes, a large number of vocational trainers will have to be created in addition to the vocational infrastructure.

A cluster of universities in physical proximity pool their resources to build vocational training centres in their vicinity that can be shared among themselves. Currently, most of the non-technical degree programmes do not have any laboratory component. However, with this new model, vocational hands-on training will be an integral part of a degree curricula which may increase the cost of the degree programme.

Local industries can play an important role in creating vocational training facilities. The industries can either pool resources to build vocational training centres or provide vocational training on their premises within their respective technical domains on a chargeable basis. The active participation of the industries will automatically keep the vocational courses updated and contemporary.

Universities may partner with the existing Skill Universities where the students could undergo training for some duration as a part of their curricula. However, as mentioned, most of the existing vocational training centres offer outdated programmes. A substantial revamping of these institutions will have to be taken up for making this option attractive.

## **Institutional Planning**

One of the most important aspects of MEME is institutional planning. Currently, the institutional planning is done with the assumption

that the students admitted to a degree programme will pursue the programme without any break. The multiple entry and exit option creates difficulties in institutional planning, like the number of faculty, infrastructure etc. While things may get levelled out in the long run once the system reaches a steady state, in the initial stages of implementation, there has to be some financial as well as regulatory support from the Government.

## **CREDIT BANK AND MOBILITY OF STUDENTS**

NEP–2020 has strongly advocated the idea of student-centric education system. Students will be empowered to decide the curriculum they would like to go through to make the education not only employable but enjoyable too. The students should be allowed to choose not only their courses but faculty and institutions as well. It has therefore been suggested that students will be given flexibility in earning academic credits from multiple institutions for the award of a degree. It has been suggested that there will be flexibility in the transfer of credits among different institutions. Students can create a credit bank where credits for various courses from multiple institutions can be accumulated over a certain period of time. Once the sufficient number of credits is accumulated, the students can obtain a degree from a university.

There are major issues in the implementation of this policy and the Regulator has to play a crucial role in realising the objectives of the policy.

### **Uniform Credit Framework**

Currently, there is no uniform credit framework in the country. Some institutions follow ‘marks system’ whereas others follow the ‘letter grading system’. For a system of credit banks, a uniform credit system will have to be developed across the universities. For defining a credit, generally a semester is considered to be of 15 weeks’ duration. One classroom contact per week for a semester is called one credit. The tutorial component of a course also follows the same definition of a

credit. For a laboratory however, one contact hour per week is taken as 0.5 credit. It is assumed that a student spends an equal amount of study time on a course outside the classroom or laboratory. This definition of a credit is more or less universally accepted. For projects and internships, appropriate credits are assigned depending upon the quantum of work a student is expected to do per week. Generally, students take 15 to 20 credits of academic load in a semester. Typical degree programmes have about 40 credits per year giving about 120 credits for a 3-year programme and about 160 credits for a 4-year programme. The same credit definition is followed even for the postgraduate programmes.

### **Uniformity of Academic Standard**

With time, the 10-point letter grading system is gaining popularity. UGC has defined the letter grading system that will have to be uniformly followed by all the institutions, irrespective of their discipline.

The most important aspect of the letter grading system is the ‘relative grading’. As the name suggests, the relative grading system assesses the performance of a student relative to the other students in that group. Different institutions use different models to convert the absolute performance into relative grades. However, once the letter grade is given, there is no way to find the performance of a student on an absolute scale. It is highly desirable to evolve a grading system that takes into consideration a combination of absolute and relative performance so that grades from different institutions are directly equated.

Alternatively, university groups that have a similar academic standards for grades will have to be identified/created among which the credit exchange is seamless. The similarity of academic standards of different institutions may be established by the accreditation process. Portability of credits may happen within NAAC accredited institutions with similar grades. It may be appreciated that without a proper quality standard for the grading system, the Credit Bank concept may not achieve its objectives.



## Award of a Degree

It should be clearly defined which university will grant a degree on the basis of the accumulated credits. If there is no clarity on this aspect, students, after accumulation of credits, will not know how to get a degree! Ideally, after accumulating the required credits, a student may approach any of the peer universities and acquire a degree. However, an institution may not see any value, either academically or financially, in awarding a degree to a student who has not done sizeable credits with that institution. Therefore, there has to be a regulation clearly defining the process of obtaining a degree after accumulating the required number of credits. It may appear logical that for an institution to offer a degree, a student should have done at least 50 percent of the total required credits with that institution. However, this needs a debate to reach to some consensus.

Alternatively, separate universities for awarding degrees based on credit banks can be established in the country. The main concern however would be that the market may start perceiving these degrees differently than normal university degrees and the purpose of the academic flexibility through the credit bank would be lost.

## MULTIDISCIPLINARY EDUCATION

The NEP–2020 has given special thrust on making higher education multidisciplinary. It has also emphasised a special need to enhance the liberal arts component in degree programmes to make the students culturally and socially aware. The recommendation has two-fold implications. One, it discourages institutions with solitary disciplines, and two, it desires strong interaction between different departments of an institution.

A multidisciplinary education is desirable for proper employment and strengthening the natural capabilities of an individual. In real life, problems are never straight jacketed in a single discipline; they are mostly at an intersection of multiple disciplines. For example, productdevelopment may need knowledge of mechanical, electronics,

computer, techno-legal aspects, finance, marketing, sustainability etc. The students therefore should be given opportunity to strengthen the aspects that they feel are important for their professional as well as personal development.

While an individual prepares oneself for professional success through multidisciplinary education, one might like to acquire proficiency in one's passion. A flexible multidisciplinary education therefore is the core of a student-centric system.

### **Minor Degree Programme**

One of the ways to introduce multidisciplinary in a degree programme is to introduce the concept of a 'Minor degree'. A structured set of courses can be offered by a department for a student to qualify for a Minor-degree. For example, a department of Law can design a set of courses worth 20 credits that any engineering student can take and get a Minor degree in Law along with his/her main degree in engineering. AICTE has already permitted such provision albeit within engineering and management only.

### **Open Electives**

Each degree programme can keep a provision for a large number of open electives. These courses need not have a structured sequence and can be chosen by the students as per their wish. There will not be any special mention (like that in case of a 'Minor degree') in the degree certificate but a student will be empowered to select his/her basket of courses.

### **Learning by Doing**

As mentioned earlier, real-life problems always cut across multiple disciplines. A project-based learning automatically exposes students to multiple disciplines. This will also help students to develop a holistic vision for real life issues and their solutions. In this context, it will be desirable that the students are asked to work on contemporary societal issues during their internships and projects.

## Multidisciplinary Faculty

To impart multidisciplinary knowledge to the students, it is important to get faculty who have worked across multiple disciplines. Such faculty may be hired as a joint appointment between departments that would also help in the migration of ideas from one discipline to another. Experts that have a multidisciplinary approach are generally found in industries. Involving industry personnel in teaching at universities will enhance the multidisciplinary culture at the universities. One of the biggest hurdles in getting industry professionals in university teaching however is their non-PhD qualification. Regulatory bodies should allow flexibility in PhD qualifications for experienced industry professionals.

## Online Courses

Technology is the best solution to introduce multidisciplinary culture in an institute. Online mode of education not only facilitates multidisciplinary curricula but expands the horizon of the students beyond the boundaries of their departments and even their institutions.

There is a wide variety of online platforms that provide access to the best academic content from across the globe. Currently, there is some apprehension about using the online content in regular curricula. However, technology-enhanced learning is the solution to make quality education scalable and affordable to wider section of the society.

## FACULTY AND ACADEMIC LEADERSHIP

The NEP–2020 has provided a special thrust on building academic leadership and faculty training. Faculty is the backbone of an academic institution. Faculty inspires generations of students and therefore has a multiplicative effect. Ideally, the best brains should be recruited as faculty. However, the reality is far from this. Leaving some handful of institutions, the faculty quality in Indian universities requires significant improvement. A Teaching job probably is the last option in the minds of graduating students. This is primarily

due to disparity in perks that an academic receives compared to an industry professional. After 6th pay commission, the faculty salaries got some boost, but its implementation is mostly seen in public institutions. In private universities and institutions, the faculty are mostly underpaid. In spite of strict regulatory requirements for accreditation, many private institutions exploit faculty without giving proper compensation. Some of this can be attributed to the improper financial model for educational institutions. This aspect will be discussed in the subsequent section.

Today, there is an acute shortage of qualified faculty in the country. To attract the brightest minds to the teaching profession, university jobs will have to offer not only competitive perks but also an intellectually stimulating research environment. After completion of graduation and postgraduation degrees, the brighter students should have equally exciting and lucrative career options in academics. These minds should be attracted to academics through special incentives. In fact, those students who have some inclination towards teaching as a profession should be mentored during their student days and motivated for adopting the teaching profession. They may be involved in teaching activities even during their post-graduation years.

Academic leadership is highly important for building an institution. There are ample examples that demonstrate that proper leadership has transformed the institutions. The leadership in Indian academics has two problems. One, there is no formal process for mentoring academic leaders. Second, due to political interference, non-deserving people are put in top leadership positions.

The first problem can be addressed by creating training programmes for deserving faculty to become academic leaders. The faculty that possess some leadership characteristics are to be nurtured and guided for higher leadership positions. It may be pointed out that a high achiever at a personal level may not always be the best choice as an institutional leader. A right balance of academics, ethical values and the ability to take people along, are some of the essential characteristics of an institutional leader.

The second problem is related to the administrative autonomy that an institution enjoys. Today, on paper, universities are fully autonomous entities. However, in reality, there is political interference at every stage of university functioning including the appointment of vice chancellors, deans and other functionaries. By empowering the apex bodies of institutions that consist of eminent academicians, industry professionals and distinguished personalities in society, institutions can be made free of political interference.

### FINANCIAL MODEL FOR HIGHER EDUCATION

In the 21st century, the students' aspirations and expectations are very different. Students expect state-of-the-art facilities for academic as well as extra-curricular activities in an educational institution. From the 'brain drain' viewpoint also, an experience at par with that of an international university is desirable.

The NEP–2020 gave very less emphasis on the role of private universities. Many of the recommendations appear to be made keeping in view the public funded institutions. Presently, more than 70 percent of educational institutes in India are in the private domain and many of them are not financially viable. They have minimalistic infrastructure and substandard faculty.

To build a university of global standards, one needs a robust financial model. Unfortunately, the NEP–2020 has not provided any financial model for a university. The Policy has reiterated that the education has to be philanthropic. The spirit of this is well appreciated as it prohibits commercialisation of education. However, non-commercialisation of education means a university should be non-profit making. It need not be philanthropic. Even to encourage philanthropy through donations to educational institutions for building large corpuses, the tax policies need extra support for the education sector.

Many private players are willing to invest with non-profit motive but there has to be a revenue model for sustaining a university. The ceiling on the fees by regulatory bodies make the quality universities become financially unsustainable. It is important to note that quality

education comes at a price. It is desirable that instead of capping the fees, Government creates ample avenues for self-financing education through low interest loans with minimal collateral. If the NEP–2020 has to succeed, a special thrust on building a sustainable financial model is essential. In absence of adequate funding possibilities, many of the recommendations of NEP–2020 may remain only on paper.

### **Scholarship and Free-ship Schemes**

The policy has proposed that students should be provided fee waivers and merit-based scholarships. Scholarship schemes based on merit or merit-cum-means are desirable in any educational institution for inclusiveness. However, in self-financing institutions which have no source of funding other than the fees, the financial burden of the scholarships will be transferred to the remaining students, and their education will become unaffordable. The scholarships proposed by NEP–2020 will have to be absorbed by the government to make the scheme financially viable for the universities that are fully self-financed. It may be noted that for the institutes of national importance, (that has a substantial postgraduate component), the revenue from fees is not more than 20 percent of their annual budget. The major component of the expenditure is the salaries of the faculty and the staff, and that is subsidised by the government. Since private institutions do not get any subsidy, a uniform scholarship model may not be imposed on them. The choice of offering scholarships should be left to the management of the institutions. The institutions may be encouraged to explore sponsored scholarships from charitable foundations and individuals.

### **CONCLUSION**

There are many other issues that will have to be addressed for the effective implementation of the NEP–2020. However, many of the issues will automatically get addressed if the autonomy that the policy envisages for higher education, is implemented in spirit and action. The autonomy has been existing on paper even prior to NEP–2020 but it is minimally effective. NEP–2020 implementation will have to

reassert minimal regulation but maximal accountability. For making Indian higher education globally competitive, the universities will have to be free from political influences, and should be academically, administratively and financially autonomous.

# RECOGNITION OF PRIOR LEARNING REDEFINING HIGHER EDUCATION WITH A PERSPECTIVE TO INCREASE GROSS ENROLMENT RATIO

Raj Nehru

*The proposal in National Education Policy–2020 to diminish the hard separation of Vocational and General Education; increasing the enrolment in vocational education; and introducing the vocational education from the early age will definitely help the reimagining vocational education in the country. This integration of VET into Higher Education is going to be a transformational step toward Skill India. The National Education Policy–2020, has mentioned that harmonisation of various education streams including VET and higher education is on the top agenda of the Policy. Given that the higher education system in India is fraught with high level of segmentation and specialisation, which restricts the students to develop a holistic understanding of different concepts, Recognition of Prior Learning can provide an effective pathway towards integration.*

## PRELUDE

One of the biggest challenges in the country today is the Gross Enrolment Ratio (GER) which is around 27 percent keeping a large segment of a youth deprived of higher education while the developed nations have their GER as high as 94 percent (Korea), 88 percent (USA), 84 percent Singapore, etc. Around 12 million skilled people are expected to join the workforce every year in India whereas the current total training capacity of the country is around 4.3 million, thereby depriving around 64 percent (7.68 million) entrants of the opportunity of formal skill development every year. The expected incremental requirements for 10 years period ending with the year



2027 are expected to be approximately 16 lakh. As per the latest report of All India Survey on Higher Education (AISHE), there are 1050 universities, 40,000 colleges, and 10,725 standalone institutions in India. The total enrolment in higher education has been estimated to be around 37.4 million. As per AISHE 2018-19 report, after surveying 38,179 colleges, 64 percent had just 500 students enrolled in them. Even amongst them more than half of the colleges had less than 200 students enrolled. In another annual survey report by the Ministry of Human Resource (now Ministry of Education), only 4 percent of all the colleges in India have more than 3,000 students. These reports clearly indicate that Indian higher education institutions have a huge unutilised capacity that goes wasted every year. This is an ideal opportunity for universities and Higher Education Institutions to develop backward-forward learning integration models by synchronising world of experience with the world of academics. This will require HEI's to innovate and provide multiple pathways in UG/PG programs for those potential students with a wide range of backgrounds and prior learning experiences. One unique function of universities is to innovatively rediscover themselves and become institutions that formally recognise learners' experiences and achievements.

The proposal in the National Education Policy–2020 to diminish the hard separation of Vocational and General Education; increasing the enrolment in vocational education; and introducing the vocational education from the early age will definitely help the reimagining vocational education in the country. This integration of VET into Higher Education is going to be a transformational step toward Skill India. The National Education Policy–2020, has mentioned that harmonisation of various education streams including VET and higher education is on the top agenda of the Policy. Given that the higher education system in India is fraught with high level of segmentation and specialisation, which restricts the students to develop a holistic understanding of different concepts. Recognition of Prior Learning can provide an effective pathway toward integration. Introducing RPL in higher education will also help in the horizontal mobility from one stream to another and also encourage vertical mobility based on the area of expertise or interest. The integration

of VET and HE will improve the diversity within the institutions and will further promote the outcome-based learning approaches that academics need to adopt. Students joining higher education institutions through RPL will also bring along various skills and competencies that will nurture cross-pollination between the world of work and the world of academics.

## RECOGNITION OF PRIOR LEARNING

Millions of people who could not pursue higher or professional education, entered the labour market and started working. Perhaps millions having experience and skills still desire to have a degree or diploma to facilitate their progress and growth for a more rewarding future. As per a youth aspiration survey conducted by Shri Vishwakarma Skill University, 58 percent of respondent youths desired to have a graduate degree indicating the charm as well as a social status symbol besides a medium to secure better livelihood and jobs. In fact, experienced and qualified/certified will have a higher demand in the market and can contribute to the demands of productivity and higher performance issues. As the India Skills Report also indicates that experienced candidates have higher demand in the job market, the Recognition of Prior Learning process can help such persons acquire a formal qualification that matches their knowledge and skills, and thus contribute to improving their employability, earn-ability, mobility, lifelong learning, social inclusion, and self-esteem, consequently adding to the economic progress of the nation.

Recognition of Prior Learning (RPL) refers to an assessment process used to evaluate a person's existing skill sets, knowledge, and experience gained either by formal, non-formal, or informal learning. Additional formal learning may also be taken into account when establishing RPL. As per NSQF Gazette notification Dec 2013, "Recognition of Prior Learning" or "RPL" is the process of recognising previous learning, often experiential, towards gaining a qualification."

RPL acknowledges that learning outcomes can be acquired in different ways, forms, and settings, with a distinction between formal, non-formal and informal learning. RPL puts the focus on the outcomes of

an applicant's learning and not on the way competencies were acquired. Due to lack of appropriate qualifications, a large proportion of people face severe disadvantages in getting decent jobs, migrating to other regions and accessing further education, even though they might have the necessary knowledge and skills. The RPL process can help such persons to acquire a formal qualification that matches their knowledge and skills, and thus contribute to improving employability, mobility, lifelong learning, social inclusion and self-esteem. International Labor Standards and International Labor Conferences (ILC) have emphasised the importance of RPL and recommended establishing systems for RPL. RPL promises to address the disconnect between education and life. In the absence of recognized qualifications, a large proportion of people face severe disadvantages in getting decent jobs, migrating to other regions, and accessing further education, even though they might have the necessary skills and knowledge. The RPL process can help these individuals acquire a formal qualification that matches their knowledge and skills and thereby contribute to improving their employability, mobility, lifelong learning, social inclusion, and self-esteem. Recognition of Prior Learning shall guarantee a win-win situation for everyone and shall change the face of the Indian Education system.

### **STRATEGIC GOALS OF RPL**

The purpose of RPL is not to be a substitute for education and training but to contribute towards distinguishing between a 'skills gap' from a 'recognition gap' and accordingly applying the measures for assessing and assigning National Skill Qualification Framework (NSQF) aligned academic credits towards qualification for vertical and horizontal mobility.

1. To increase GER in higher education
2. Promote lifelong learning and lifewide learning among the youth of the state for a sustainable livelihood
3. To promote social inclusion of the citizens of the state
4. Respect for vocational education and make it aspirational

5. Mobility in higher and vocational education
6. Skilling, reskilling, upskilling, and cross-skilling of youth for higher productivity, innovation, and economic growth
7. Develop an entrepreneurial mindset

Learning is a continuous process and people learn throughout the course of their lives. When the learning is performed through the formal education system, it is valued, recognised, and gives the required weightage to an individual that they strive for. However, learning that takes place outside the formal education and training system is often, not well understood, valued, and recognized. On-the-job training, informal apprenticeships, elderly care, self-employment initiatives, and activities result in some form of learning gain but most of the time these skills learnt do not get recognised for formal certification. Due to a lack of appropriate formal degree/qualifications, a large proportion of people face severe disadvantages in getting decent jobs, migrating to other region and poor access to further education, even though they might have the necessary knowledge and skills.

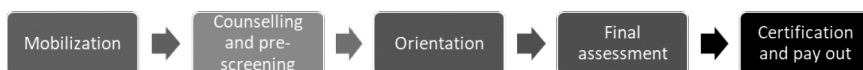
Asymmetric information in the labor market is the other issue that is quite upsetting. The lack of formal education or qualification amongst workers deprives them of being visible or available to the labor and employment market. This creates a serious roadblock to millions of deserving and experienced workforce from getting and exploring work opportunities in the vast and diverse labor market and therefore hampers their mobility. Besides, it also hampers their sustainable career progression and growth due to the limited visibility and therefore get exploited by employers who engage them. The prevalence of asymmetric information thereby leads to statistical discrimination and exploitation of this class of workforce.

## **RPL IN INDIA**

RPL in India focusses on enhancing employability opportunities by reducing inequalities among those who do not have and have

formal qualifications. The initiative of RPL under the PMKVY 2 is expected to enable a large number of Indian youths to take up industry-relevant skill training, which will help them secure a better livelihood, however, it has yet not been used as a tool to strengthen educational mobility by providing higher education pathways. This requires the government to make policy changes that recognises the higher qualification earned through RPL mode.

RPL programme recognises the value of learning acquired outside a formal setting and provides a government certificate for an individual's skills. The RPL under PMKVY has focused on the informal sector workers on a priority basis. All RPL candidates undergo following 5-step RPL process to gain RPL certificate:



Through RPL, the aim is to align the competencies of the pre-existing workforce of the country to the standardized framework NSQF. Supporting formalisation of the informal learning of youth supplements their efforts in finding sustainable livelihood opportunities and reduce inequalities based on privileging certain forms of knowledge over others. Candidates go through 12 hours of training and receive exposure to concepts of digital and financial literacy and accidental insurance coverage for three years free of cost. No fee is charged from a candidate for participating in the RPL program and every successfully certified candidate will receive INR 500/-.

Current RPL Status in India is as follows: Training Centers— 22550; Training Partners— 141; Job Roles— 586; Enrolled Candidates— 3320403; Trained Candidates— 3320403; Assessed Candidates— 2912467; Successful Candidates— 2736212.

RPL has increasingly been recognised as a useful way to certify experience and competencies gained in the workplace informally. India has the goal to skill 300 million of its growing workforce and provide them access at various levels to certification and further learning opportunities. RPL has had a positive effect on income opportunities, occupational safety, social status, and openness to further learning

(Sandra, Comyn & Banerjee 2018). Through the adoption of RPL in HEIs, India's workforce could develop marketable skills in other service sectors and acquire formal qualifications to serve the nation. This will also lead to a manifold increase in the GER which is also essential for a developed nation. (Abrol, Srivastava 2020). The Large no. of candidates trained under RPL, with assessment qualify for a QP/Job role with specified NSQF Level government certificate but do not get the opportunity to have educational mobility/exemption in Academic Credits of Certificate/Diploma/Degree of the NSQF levels cleared.

## RPL ACROSS THE WORLD

Across the world, countries have increasingly recognized the value of informal and non-formal learning and many are establishing systems to acknowledge competencies gained through informal and non formal ways. Many developed and developing countries have done some significant amount of work to address this labor market anomaly and discrimination by developing models, policies, and programmes that facilitate recognition of prior learning in higher education. The credit exemption/concession given under RPL assessment in the majority of countries is up to 50 percent. On an average approximately 60 percent of the graduation courses can be exempted under RPL. The entry-level to three-year degree majorly is after completing the 5th level of their respective qualification framework of the country. The eligible age for the applicant is 18 years in most of the cases. In South Africa, the eligible age criteria is 23+. Some common methods of RPL Assessment include evidence documents, testimonials, portfolio, interview, written examination, practical demonstrations, etc. Many countries in Europe consider 10 notional hours, which is equivalent to 1 credit. In other countries, 1 credit is equivalent to 45–50 hours and in some cases, it is 25–30 hours. A wide range of technical vocational courses is available with the support of RPL implementation. Australia has institutes recognized as Registered Training Organization (RTO). Horizontal and vertical mobility is possible and successfully implemented. Written challenge, oral examination, interview, product assessments,

and portfolio assessments are major activities, performed in RPL. The replacement and inclusion-anyone can be opted by the candidate on the basis of the RPL assessment. At least three years of work experience as an employee, an independent worker, or a volunteer is required for RPL. For employment opportunities mainly RPL was instituted in Singapore. The prior experience can be implemented at a different levels of education Primary, Secondary or Higher Education. Courses are designed in a way such that the RPL can be utilised and it motivates the aspirant to pursue higher education in USA. Countries have increasingly recognised the value of informal and non-formal learning and many are establishing systems to acknowledge competencies gained through informal and non-formal ways. Many developed and developing countries have done a significant amount of work to address this labor market anomaly and discrimination by developing models, policies, and programmes that facilitate Recognition of Prior Learning in Higher Education.

## RPL SURVEYS

Shri Vishwakarma Skill University conducted an Industry and Academic Leaders Survey to understand the awareness, advantages, and adoption of Recognition of Prior Learning in Higher and Vocational Education.

## CHALLENGES

- A. As per the survey responses received, only 29 percent of the industry experts were aware of recognition of prior learning. 71 percent of them were not aware of RPL or were partially aware of RPL. However, in the case of academic leader respondents. 55 percent were aware of the RPL. This variation in the awareness of RPL amongst the industry and academic community is a matter of concern, as it will have a significant impact on its adoption and implementation of RPL in their respective organisations as a pathway to development, employment & career progression. Industry awareness is key to the success of RPL. Given the a symmetry in the labour market information

system, the industry awareness and implementation of RPL can address this issue. Consequently, this can raise the demand for RPL certified candidates. Addressing the awareness and implementation of RPL at the academic level can address the challenge of developing the assessment and certification models. It can attract the eligible population for higher vocational education & learning as a medium to access advancement in learning and skilling. Addressing this awareness gap will significantly impact the success of RPL implementation in India as it will open opportunities for millions of eligible aspirants. It will also help them to get recognized and certified for the skills & competencies that they have gained and acquired through formal, non-formal or informal learning.

- B. 100 percent of the respondents agreed that assigning academic credits through recognition of previous learning is a challenge. This challenge is due to various reasons. There is a lack of vision to recognise the unique function of the university as an institution to formally recognise learner experience and achievements. Universities have yet not recognised the need to innovatively rediscover themselves and become institutions that focus on developing the skills of tomorrow in a way where learning can be personalised to the requirements and preferences of the individual learner. Future universities need to be the institutions that promote lifelong and lifewide learning by offering multiple pathways including Recognition of Prior Learning. The higher institutions don't have lifelong learning as a priority and therefore no efforts have been made so far to understand it or study this mode of learning. This lack of effort has resulted into a poor clarity amongst its institutional resources about RPL. Consequently, there are uncleared doubts about the reliability and validity of RPL. Besides this, there is a lack of skilled staff and quality assessors in the institutions. Society, industry, and the eligible population lack awareness about RPL. In the absence of any such model, the deployment of RPL is absent. While 100 percent respondents agreed that RPL will motivate the dropouts and adult learners for further pursuing their education and skills, 81.7 percent agreed that



assessment models must be developed for awarding credits through RPL.

## EXPECTED BENEFITS OF RPL CREDIT BASED SYSTEM IN THE STATE

Recognition of Prior Learning (RPL) is an appropriate method of assessment that promotes the need of life long and life wide leanings through Upskilling, Reskilling and Cross-skilling (Fig 1). Valuing and recognising these learning outcomes will prevent a learner from repetition of learning similar modules when applying for higher education programs and will save their time, motivate them to learn new modules and further their learning and strengthen their labour market opportunities.

This may also help integrate broader sectors of the population, who continue to remain or have remained excluded from formal higher education, into a flexible higher education and training system. It will also make our higher educational institutions inclusive and open to integrating with the world of work.

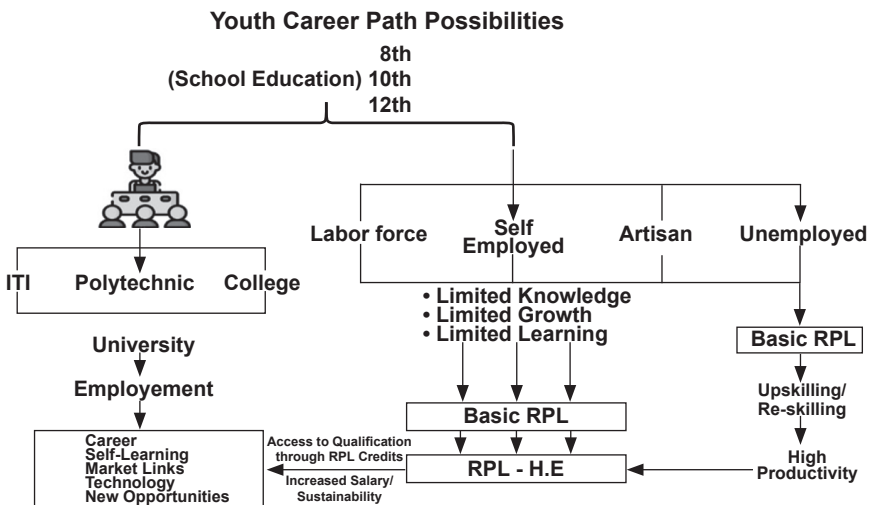


Fig. 1. Youth Career Path Possibilities through RPL

1. **RPL for Credit Accumulation:** RPL can help in accumulating academic credits progressively over time with non-formal/

informal learnings and utilizing these in a single qualification degree/diploma, etc. Transfer and accumulate academic credits within the same NSQF level, from one qualification and pathway to another. It will also help an individuals to choose their vocational degrees based on preferences for specific vocations and accumulate credits accordingly. A step in the direction of interdisciplinary vocational degrees.

2. **RPL as Preventive Measure for Dropouts:** Young people drop out for various reasons of family/personal/pathway not adapted to their learning styles or aspirations. Reorientation towards a more adapted education and training program can be part of the solution to prevent dropping out.
3. **RPL as Curative Measure for Dropouts:** Young people who have dropped out for some time from education and training may plan to restart the academic life again by enrolling in identified RPL initiative to gain credit recognition for what they have learnt while in formal education and training. This could be combined with recognition for what they have learnt while working.
4. **RPL for Career Advancement:** RPL will provide employee and employer benefits and a base for lifelong learning. The validation of non-formal and informal learning enables individuals to receive recognition for what they have learnt through professional activities, volunteering or leisure activities or any other learning. RPL will recognise learning outcomes for parts of qualifications and will further provide people the possibility to achieve the remaining units of learning outcomes through formal learning. This will further help an individual to progress towards achieving higher career paths in their respective organisations of employment or self employment.
5. **RPL as a Tool for Social Inclusion:** RPL will help participation and educational mobility of almost all in the society, particularly for people who are disadvantaged, through enhancing opportunities, access to resources, voice, and respect for rights.

6. **RPL as a tool for Vertical Mobility:** Transferring and accumulating credit from a qualification at one level towards a qualification at a higher NSQF level. There is a constant need to update the qualifications of employees and in some cases, RPL can support such changes by making it easier to recognise the parts of qualifications (credits of learning outcomes) that the individual(s) hold(s) toward the qualification to be acquired. By using RPL, it can be possible to shorten the process of achieving a new qualifications for people who already hold relevant qualifications by asking them to only undergo learning for credits that concern learning outcomes they have not yet achieved.
7. **RPL as a tool to increase GER in Higher Education:** Entry into vertical education mobility with credit exemption of skill component shall encourage eligible applicants to acquire Graduation in a shorter time by possibilities of upskilling, reskilling and cross-skilling. This will further improve productivity and innovation in the industry.

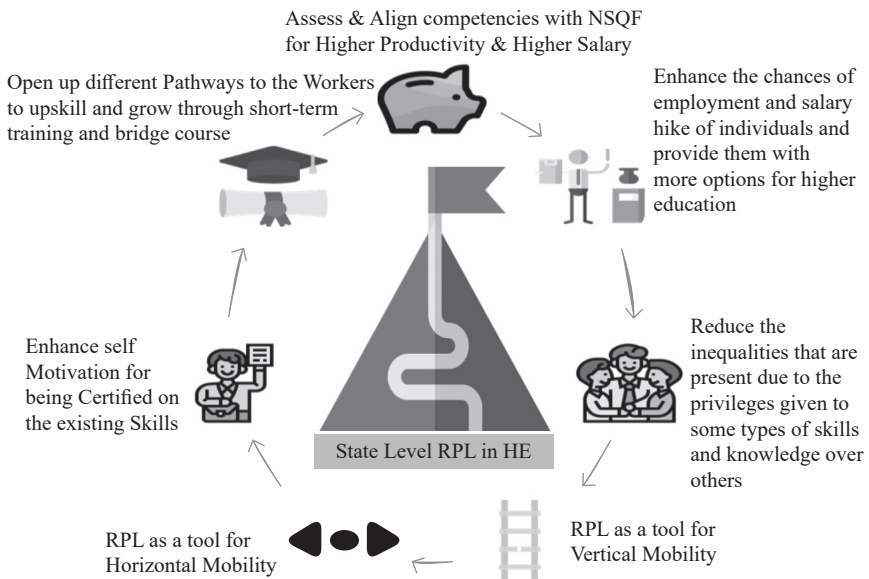


Fig. 2. Expected Benefits from RPL Credit Framework

## RECOMMENDATIONS

1. Intervention of the central government to develop an RPL policy and practices for higher education that explicitly address remove the challenges and roadblocks in the path of work-based learning. The Policy explicitly needs to have enough provisions that motivate the eligible dropouts, adults, and experienced learners to enroll for higher education besides incentivising educational institutions and employers. The approach requires commitment from Academics and Industry without which it will be difficult to make this policy successful. Hence, the policy also needs to create a clear and credible system that will enable lifelong learning in a sustainable manner.
2. In India, UGC has approved the BVoC and MVoc programmes with a differentiated methodology for credit allotment. In these VET programs, 60 percent of the credits are earned through non class-room methods including apprenticeship, work-embedded assignments, and practical and workshop-based learnings while 40 percent of credits are earned through class room theoretical and conceptual inputs offered through face-to-face learning or MOOCs. The 60 percent of credits can be assessed and mapped to the prior experience of the applicant. This requires a significant commitment from Higher Education Institutions and Industries in terms of creating infrastructure and assessment capacities and making policies
3. The higher education institutions need to create a wing for RPL that defines the comprehensive assessment framework and credit allotment methodology. Most of the nations and institutions who have addressed higher learning and skill gaps, identified through a structured process of RPL, have noticed that when skill gaps are addressed through a blended learning strategy (F2F, Self-Paced Learning, Virtual Learnings, etc.), it effectively

developed the vocational, professional and technical competencies of lifelong learners.

On the other hand, industries can support by modifying recruitment guidelines to accommodate new programmes/qualifications in their recruitment and promotional guidelines besides working with educational institutions in developing effective assessments methodologies for RPL.

4. The credibility of the system will depend on the quality of the processes defined to clearly map outcomes of a program/qualification with the prior learning experiences of the learner. It will also require an immense awareness of such qualifications awarded across the stakeholders including students, society, institutions, and industry.
5. The existing available unutilised capacities in higher education institutions can be aligned to a community college model (part-time/evening/night education) that can help India to achieve the GER with economies of scale.
6. This needs every institution to train and employ staff counselors/assessors who are able to clarify doubts with respect to reliability and validity of RPL outcomes and quality of learning assessed and have the expertise to allocate credits to specific experience matching outcomes. The industry can offer its subject matter experts for assessments and help in mapping student experience portfolio with the outcomes of the programmes applied for every Higher Education Institution may constitute a Credit Accreditation Board to award and approve credits and equivalence with level outcomes.
7. Every state government along with the higher, technical, and skill education departments can formulate a state policy that can be pursued by both educational institutions as well as industries and employing organisations. Proper coordination amongst all stakeholders is important. Appropriate communication and awareness is required to mobilise the eligible youths. The local universities and

institutions can design and tailor their programs as per the local market needs and requirements aligned with national objectives.

## CONCLUSION

Recognition of Prior Learning is an effective tool for strengthening the foundation of national development objectives besides addressing RPL as a mechanism, through which millions of youths can get access to upgrade their level of knowledge, skill, abilities, and qualifications and contribute meaningfully to their personal, professional, and national interests. In a country like India, it can act a boon to millions of potential eligible aspiring youths who to many constraints had to drop the pursual of higher education and opt to enter the labour market. RPL can be a transformative tool to achieve higher GER along with bringing sustainable livelihood and employability as it will also help in determining correct wage fixation as per the acquired higher qualifications and will check on the exploitation of the skilled workforce. RPL will also encourage, recognise and certify those informal, traditional skills that were passed from one generation to another and will also enhance the dignity and quality of such work. RPL, by addressing skill gaps, will help in achieving higher productivity thereby making a significant contribution to the national GDP.

Given the emergence of workforce needs in an emerging global market struggling with demographic challenges, RPL can make these qualified resources eligible for global mobility in wake of the international job demands.

An important challenge that needs to be addressed is to develop a mechanism of identifying where the skills exist and how the same can be documented and communicated with the eligible desirous candidates. There is a need to develop methods of creating the potential individuals' potrtfolio, reviewing, them and also methods to assess them through written and oral ways including demonstration. The assessments need to be effectively, qualitatively, and transparently aligned to the different levels of the National Skill

Qualification Framework, so that it benefit the applicants in long run. The information campaigns, counseling, and guidance are key to the success of this RPL in higher education. RPL has for sure a great potential to tap and realise unrecognised talent by providing pathways to higher qualification and learning. It can surely be an effective model for the employers to upskill and retain the aspiring potential resources by offering them higher career opportunities and differentiated wages, linked to higher qualifications and skills. This will also help in an efficient method to address the asymmetries in the Labour Market Information System and provide more qualified and job-ready talent availability information to recruiters.

RPL provides employers opportunity to design flexible compensation plans, and talent engagement strategies that will boost employee motivation, quality performance, and service delivery.

“Skills recognition and certification initiatives in the informal economy through Recognition of Prior Learning (RPL) processes will provide an important pathway for the 90 percent of Indians who work in the so-called unorganized sector” (*NCEUS Report, 2009*).

Guided by the principle of Antyodaya, Recognition of Prior Learning in Higher Education is dedicated to empowering the poor, marginalised and those left behind in order to transform their quality of life and contribute meaningfully to the nation’s economic progress.

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# TEACHER EDUCATION AS ENVISAGED BY NATIONAL EDUCATION POLICY–2020 SOME KEY POINTS

**Benudhar Chinara**

*The National Education Policy–2020 emphasises making teacher education an integral part of the higher education system. It is a fact that teacher education is a specialised area of education discipline. In order to improve and reach integrity and credibility and aim to bring efficacy to the teacher education system, the professional stream of teacher education should offer teacher education programmes not in the Departments of Education but in the Departments/Institutes/Colleges/Universities of Teacher Education/Teaching/Pedagogy.*

*The discipline of ‘liberal education’ develops a deep and rigorous theoretical understanding of educational foundations, enquiry, and perspectives and thus, lays the foundation of ‘teacher education’ system. Both liberal education and professional teacher education co-exist, supplement each other and are interdependant. Thus, teacher education programmes must require some faculty positions exclusively with degrees of liberal education. The National Education Policy–2020 aims to make the 4-year integrated BEd as the minimal degree qualification for school teachers and allow to exist only educationally sound, multidisciplinary, and integrated teacher education programmes by 2030.*

## PRELUDE

National Education Policy–2020 (Sub-section 15.4) requires multidisciplinary inputs and education in high-quality content as well as pedagogy acknowledges teaching as the mother of all professions. Devoting entirely one chapter, i.e., Chapter-15 is a testimony to it. The current teacher education programmes, such as diploma in



Elementary Education, Bachelor of Elementary Education, BEd, MEd, BPed, MPed, integrated BEd, and integrated MEd are running either in the Departments of Education at universities, Regional Institutes of Education, Colleges of Teacher Education or Institute of Advanced Study in Education affiliated to general universities or teacher education universities. The faculty members employed for these programmes are mostly with composite essential qualifications: MA/MSc/MCom with MEd; MA/MSc/MCom with BEd; MA in Education with BEd or MEd; even with only MA in Education, and possibly even with some different combinations. These variations are the outcomes of the norms and standards of teacher education programmes prescribed by the National Council for Teacher Education (NCTE) from time to time since its establishment in 1993 by the Act of Parliament. In the process, one can witness that candidates without any specialisation in school subjects have also become faculty in teacher preparation programmes. Going a step further, the time has witnessed and is even encountering the dilemma of whether BEd (i.e. Bachelor of Education) is the same as or equivalent to BA (Honours/Major) in Education (i.e. Bachelor of Arts in Education); and MEd (i.e. Master of Education) is same as or equivalent to MA in Education (i.e. Master of Arts in Education). All that has happened perhaps may not be due to the professional prerequisites and requirements of the teaching profession, but rather because of personal influence and interest among the persons involved in preparing such norms and standards.

With the backdrop of the aforesaid scenario along with some other reflections as observed by Chinara (2019) and the policy provisions of teacher education envisaged by the National Education Policy–2020, the paper attempts to delineate some context-specific and generic measures of policy implementation.

### **MOVING TEACHER EDUCATION INSTITUTIONS INTO MULTIDISCIPLINARY COLLEGES AND UNIVERSITIES**

The NEP–2020 (Sub-section 15.5) enunciates that “... a 4-year integrated BEd will be a dual-major holistic Bachelor’s degree, in

education as well as a specialised subject (such as a language, history, music, mathematics, computer science, chemistry, economics, art, physical education etc.)”. With respect to dual degrees, the first one should not be termed as ‘education’ but ‘teacher education’. And the second one, i.e., the specialised subject has not been grouped under the broad discipline questioning the basic idea of the multidisciplinary nature of teacher education as envisaged by the policy document. Thus, a 4-year integrated BEd should be clearly stated as a ‘dual-professional-liberal Bachelor’s degree’, i.e., one being in ‘teacher education’ and the other being in any one ‘specialised school subject’ under a broad academic/liberal discipline such as:

- Science Education (Chemistry, Physics, Life Science, Earth Science, Computer Science, etc.).
- Mathematics Education
- Social Science Education (History, Geography, Economics, etc.)
- Language education (any Modern Indian languages, area-specific tribal language, English, etc.)
- Any other broad liberal disciplines having relevance to school education

The Policy (*Sub-section 15.5*) too pronounces, “teacher education will include grounding in sociology, history, science, psychology, early childhood care and education, foundational literacy and numeracy, knowledge of India and its values/ethos/art/traditions, and more.” Does teacher education not require grounding in education as a discipline? This aspect needs to be given a priority because of the reasons cited in a separate section of this paper.

The Policy aims to make ‘the 4-year integrated BEd as the minimal degree qualification for school teachers and allow to exist only educationally sound, multidisciplinary, and integrated teacher education programmes by 2030’ (*Sub-section 15.5*). What will happen to the provisions for the 2-year BEd for students who have already received a Bachelor’s degree in a specialised subject and the 1-year BEd for candidates who have received a 4-year undergraduate degree

in a specialised subject? A timeline should be given for abolishing 2-year BEd programme while stating clearly to run a 1-year BEd programme along with a 4-year integrated BEd programme in the multidisciplinary teacher education institutions.

When the existing stand-alone teacher education institutions/colleges/departments providing single programme of teacher education have miserably failed to provide quality teacher education, can those be made multidisciplinary by 2030 as envisaged by NEP–2020 (*Sub-section 15.2*) “to raise standards and restore integrity, credibility, efficacy, and high quality to the teacher education system”? Does it not look like the innovative idea of ‘School Complexes’ propounded by the Education Commission 1964-66 which has not yet been implemented even after a lapse of more than five decades and yet the National Education Policy–2020 (*Section 7*) recaps the same in the form of School Complexes/Clusters? Thus, before bringing teachers education programmes from stand-alone teacher education institutions into multidisciplinary from stand done by 2030, there should be integration among the following four fundamental departments/centres for the existing teacher education institutions:

- Academic and liberal stream-oriented Department of Education providing Bachelor of Arts in Education [BA (Hons/Major) in Education], Master of Arts in Education (MA in Education), and PhD in Education programmes;
- Professional stream-oriented Department of Physical Education providing BPed, MPed, and PhD programmes;
- Well-being life-oriented Centre/Department of Yoga/Yogic Art and Science providing certificate, diploma, and degree programmes;

## DEPARTMENTS OF TEACHER EDUCATION IN UNIVERSITIES

Earmarking a full chapter on teacher education, i.e., Chapter-15, the NEP–2020 accentuates making teacher education an integral part

of the higher education system. It uses the phrases such as teacher education programmes, teacher preparation programmes, teaching profession, and teacher education system and puts forward its logic (Sub-section 15.4) how to address teacher education programmes requiring multidisciplinary inputs, and education in high-quality content as well as pedagogy under the nomenclature of ‘Department of Education’ within composite multidisciplinary institutions. Why should the departments offering teacher preparation programmes be named ‘Departments of Education’? Why should not they be named as Departments/Centres of Teacher Education/Teaching/Pedagogy within multidisciplinary higher education institutions?

It appears from this that there is no difference between ‘education’ and ‘teacher education’ for the policymakers. But in reality, ‘education’ cannot be equated with ‘teacher education’, the latter being one of the specialised areas of the former. Secondly, ‘education’ is a general/liberal education stream/academic stream like Geography, Sociology, Physics, Life Science, Hindi, or Odiya. But ‘teacher education’ is a professional stream like Medicine, Engineering, Law, or Agriculture. Both ‘education’ and ‘teacher education’ being different, it has become indispensable to consider the following courses of action:

- Wherever Departments of Education at universities are offering exclusively teacher preparation programmes, they must be renamed as Departments/Centres of Teacher Education/Teaching/Pedagogy.
- Wherever Departments of Education at universities are offering both liberal education and professional teacher education programmes, the latter programmes should be shifted to Departments/Centres of Teacher Education/Teaching/Pedagogy by creating such departments/centres.
- Universities that are interested to provide any professional teacher preparation programmes should establish Departments/Centres of Teacher Education/Teaching/Pedagogy.

Further when professional programmes such as Medicine, Engineering, Law, or Agriculture are offered by Medical, Engineering, Law, or Agriculture colleges/universities respectively, then, why should the

departments/institutes/colleges/universities offering the teacher preparation programmes not be named/renamed as Departments/Institutes/Colleges/Universities of Teacher Education/Teaching/Pedagogy?

### **LIBERAL EDUCATION FACULTY FOR TEACHER EDUCATION PROGRAMMES**

The NEP (*Sub-section 15.8*) emphasises multidisciplinary teacher education programmes that need faculty with a wide range of expertise in the areas directly relevant to school education such as “psychology, child development, linguistics, sociology, philosophy, economics, and political science as well as from science education, mathematics education, social science education, and language education”. The liberal discipline of education has not been included as a part of it. Is a person with liberal education degrees of BA (Hons/Major) in Education (i.e. Bachelor of Arts in Education) and MA in Education (i.e. Master of Arts in Education) ‘not fit at all’ to work as a faculty along with others from the just said discipline?

It is a fact that teacher education is a specialised area of education discipline. The discipline of ‘liberal education’ develops a deep and rigorous theoretical understanding of educational foundations, enquiry and perspectives and thus, lays the foundation of ‘teacher education’ system. Both liberal education and professional teacher education co-exist, supplement each other, and are interdependent. When the foundations of education are blended with the components of pedagogy, internship, field-based engagement, and outreach activities, it enriches the teaching profession. Thus, teacher education programmes must require some faculty positions exclusively with degrees in liberal education, BA (Hons/Major), and MA in Education.

### **GENERIC MEASURES OF POLICY IMPLEMENTATION**

In addition to the above-stated specific measures of policy implementation, the paper outlines the following generic measures of policy implementation with respect to teacher education:

- NEP–2020 has not suggested the structural pattern of teacher education system in tune with the proposed system of school education, i.e., 5 + 3 + 3 + 4 representing Foundational, Preparatory, Middle, and High/Secondary stages respectively. As a universal degree in teacher education is not fit for all the stages of school education, a BEd programme with specialisation in secondary or elementary or nursery (pre-school) education as recommended by the National Advisory Committee in its report titled ‘Learning without Burden’ (1993:26) may be introduced.
- The teacher education in the policy deals mostly with BEd programme and ignores the MEd programme. The teacher education system cannot survive if the MEd programme is not developed and enriched in tune with the teacher education programmes envisaged by the NEP–2020.
- There are teacher education universities (Tamil Nadu Teachers Education University and The West Bengal University of Teachers’ Training, Education Planning and Administration) to which colleges of teacher education are affiliated. As per the NEP–2020, there is no place for a college affiliating system in higher education. The Policy speaks about the multidisciplinary colleges and universities and is silent about the existing teacher education universities. Thus, like the existing Cultural University, Petroleum University, or Agriculture University, provisions must be made to promote the existing or create new multidisciplinary teacher education universities.
- Pandit Madan Mohan Malaviya National Mission on Teachers and Training (PMMMNTT) Scheme is presently running under the Schools of Education in different universities and institutions of higher education to provide in-service professional development courses for college and university teachers. Its activities must be outlined explicitly.
- The present status of ‘games and sports’ have been enhanced from an ‘extra-curricular activity’ through ‘co-curricular area of study’ to an ‘academic stream’. Accordingly, adequate

provisions should be made for the existing BPED, and MPED programmes under the Department of Physical Education.

‘Yoga’ has become a single regular exercise in a day-to-day life of humans across a major part of the world and prominently across India. Different institutions of learning have started offering formal certificate/diploma/degrees in ‘Yoga’, or ‘Yogic Art and Science’. Yoga has direct relevance to school education in dealing with the young masses. Thus, Yoga also should be a part of teacher preparation programmes.

- To boost up teacher education/teaching/pedagogy as a professional stream of education, NET/SET/SLET in teacher education/teaching/pedagogy should be introduced if at all the provision of NET/SET/SLET continues to remain as eligible criteria for a faculty position in any institution of higher education offering teacher education programmes.
- For a faculty in teacher education, PhD with pedagogic orientation should be another distinct part of the teacher preparation programme. The faculty of teacher education requires to have PhD not exclusively in subject specialisation (e.g. Bengali, Physics, Economics, Life Science, Mathematics, etc.) rather in the pedagogy of those subject specialisation (e.g. pedagogy of History, Bengali, Physics, Economics, Life Science, Mathematics, etc.). The research topic should include primarily the school subject specific pedagogy, internship, student engagement, teacher engagement, assessment tools and techniques for learning, development of curriculum materials, supplementary reading, student workbooks and teacher guide, improvement of classroom practices, student learning, and outreach social services.

## CONCLUSION

In order to improve and reach integrity and credibility and aim at to bring efficacy to the teacher education system, the professional stream of teacher education should offer teacher education programmes not in the Departments of Education, but rather in the

Departments/Institutes/Colleges/Universities of Teacher Education/Teaching/Pedagogy. The existing BEd and MEd programmes may accordingly be renamed as ‘Bachelor of Teacher Education/Teaching/Pedagogy’, and ‘Master of Teacher Education/Teaching/Pedagogy. India is gradually progressing in the direction of providing education of ‘comparable quality’ as recommended by the National Policy on Education 1986, through ‘satisfactory quality’ as recommended by the modified version of the National Policy on Education in 1992 and ‘reasonable quality’ as contained in the RTE Act 2009 to ‘high quality’ as envisaged by the NEP–2020. The National Education Policy perspective on today’s teacher education must aim at transforming the choice of high quality to the reality with due consideration to the suggested context specific and generic measures of teacher education policy implementation.

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# NATIONAL EDUCATION POLICY–2020 ENVISIONS CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS

Pradeep Kumar Misra | Chanchal Tyagi

*The quality and standard of education in a country depend on how it manages its teachers' quality improvement through initial preparation and ongoing professional development. Today's teachers are expected to play many different roles, rather than merely transmitting knowledge or information to the learners. They are supposed to contribute to the learners' all-around development and promote meaningful and joyful learning in the classrooms. The question among the teaching community is whether the NEP–2020 will help empower the Indian education system to adopt the concept of Continuing Professional Development (CPD) in its real sense and create a conducive environment and opportunities for teachers at different levels of education to embrace and practice it holistically and comprehensively. This discussion paper highlights the provisions made regarding teachers' CPD in earlier policy documents, how far NEP–2020 has moved regarding the CPD of teachers, what changes it suggests, and its specific recommendations about the CPD of teachers working at different education levels.*

## PRELUDE

Quality education is a global demand today. And it is a well-known fact that the quality of teachers decides the quality of any education system. In any education system, teachers play the role of pivots upon which the entire system hangs (*Omorghie, 2006 and Misra, 2015*). Teachers directly influence the processes of the classroom and the students' learning (*OECD, 2010*). In raising students' achievement,

teachers' expertise is one of the most significant factors. A report from National Council for Teacher Education (NCTE) emphasised teachers' competence, sensitivity, and motivation as the determinant factor for the quality and extent of learners' achievement. The report further declared teachers' academic and professional standards as the critical components of essential learning conditions for achieving educational goals (*NCTE, 2009*). These observations suggest that well-prepared and highly qualified teachers are crucial to achieving high standards and ensuring the successful implementation of educational reforms (*Hammond, 2000*).

In a way, the quality and standard of education in a country depends on how it manages its teachers' quality improvement through initial preparation and ongoing professional development. Ongoing professional development is usually known as Continuing Professional Development (CPD). CPD is usually meant for the quality improvement of those who are already in the profession. It is a globally discussed issue and is among the top educational policy priorities in many countries. Like other countries, previous Indian policy documents have also dealt with the ongoing teachers' professional development and made different provisions and recommendations. But the majority of these policy documents remained stuck to the concept of in-service education of teachers (INSET). As a fact, INSET is the narrower vision of CPD as it could not cover the self-driven learning and self-initiation aspects of professional development.

Surprisingly, before National Education Policy (NEP–2020), only the National Curriculum Framework for Teacher Education (NCFTE) used the term CPD and provided some measures to promote it among teachers (*NCFTE, 2009*). In most education policy documents since independence, CPD was seen from INSET's lenses. The focus was mainly on providing ready-made learning opportunities for in-service teachers. These learning opportunities mainly consisted of training programmes, orientation courses, refresher courses, faculty development programmes, and workshops. The whole policy perspective about on CPD of teachers in India till 2013 is aptly summarised by Bolitho and Padwad (2013).

Ongoing professional development, i.e., CPD, can be seen in a very restricted, narrow sense and there are limited opportunities and support for the CPD to serve teachers. Different agencies and stakeholders seem to hold different or narrow views of CPD. It is very common to see CPD equated with in-service training (INSET) programmes, which are normally one-off, isolated, short-term and infrequent training events (*p.7*).

The question among the teaching community is whether the NEP–2020 will help empower the Indian education system to adopt the concept of CPD in its real sense and create a conducive environment and opportunities for teachers at different levels of education to embrace and practice it holistically and comprehensively. This discussion paper highlights the provisions made regarding teachers' CPD in earlier policy documents. How far NEP–2020 has moved regarding the CPD of teachers, what changes it suggests, and its specific recommendations about the CPD of teachers working at different education levels.

## WHAT IS CPD, AND WHY IS IT ESSENTIAL FOR TEACHERS?

CPD is a lifelong learning process that starts with one's entry into the profession and continues throughout the career (*Panda, 2001*). Beginning with the initial preparation of a teacher, it continues throughout his/her career. It includes all those formal and informal learning experiences that a teacher gets from his/her pre-service education to retirement (*Fullan, 2001*). CPD is seen as a complex and comprehensive process of learning which encompasses all the activities required to sharpen teachers' skills and competencies, and it assists them by various means in developing a broader range of beliefs and attitudes in favour of effective teaching practices. Making a tri-polar development of the education system, CPD empowers the teachers, students, and schools (*Phillips, 1991*). Reflecting on it, Padwad and Dixit (*2011*) commented, CPD is a planned, continuous, and lifelong process whereby teachers try to develop their personal and professional qualities, and improve their knowledge, skills, and practice, leading

to their empowerment, the improvement of their agency and the development of their organisations and their pupils.

Thus, CPD is beneficial for an individual and groups of teachers, both personally and professionally, to improve the quality of the whole education system. CPD is comprehensive as it includes both “formal and informal provisions” of improvement for professionals (Joyce, Howey and Yarger, 1976). It also includes “all natural learning experiences and those conscious and planned activities” which bring direct or indirect benefits to the individuals, schools and the education itself” (Day, 1999). Identifying the comprehensive nature of CPD, different scholars have defined CPD in their own way. Padwad and Dixit (2013) perceived it as “the process of teachers’ development after joining the profession, a process of lifelong learning, both formal and informal, and involves both voluntary teacher initiatives and programmes externally planned and mandated by authorities”.

Similarly, highlighting its aspect of ‘learning on the job’ (Eraut, 1994), the Department for Education and Employment [DEE] (2001) in its report ‘Learning and Teaching: A strategy for professional development’ stated that CPD consists of all those activities that increase the skills, knowledge and understanding of teachers, and their effectiveness in schools and also promotes continuous reflection and re-examination of professional learning. This includes, and goes well beyond, training courses and a wide variety of other on and off-the-job activities.

Based on the above arguments, the following key features can be drawn to make the concept of CPD more precise and clear:

- CPD aims to enhance the education system’s quality by developing teachers’ competencies, knowledge, understanding, and performance.
- CPD includes both individual and collaborative activities and experiences of learning.
- CPD is not restricted to one particular place, such as the classroom or the institutional setting. Instead, it may occur

anywhere in the institution, at the training centre, on the internet, or even at home.

- CPD is a continuous and lifelong learning process and counts on formal and informal experiences and learning activities.
- CPD recognises teachers' voluntary initiatives of learning with the externally planned professional development programmes.
- CPD is a holistic process that includes system-driven and teacher-driven activities rather than INSET, which is mainly offered in system-driven activities.
- CPD is not dependent on the ready-made, one-size-fits-all training courses initiated by any authority or agency. Instead, in CPD, teachers are responsible for their professional learning and are expected to address their professional development needs through their initiatives.
- CPD is a career-long process of education, training, learning, and support activities in formal or informal working settings.
- CPD aims to promote educational professionals' learning and growth by enhancing their professional knowledge, skills, and values.

Considering the above-stated characteristics and potential benefits of CPD for teachers, it is critical to assess how CPD was perceived and promoted in India's policy documents from earlier times.

## **CPD REFLECTED IN EARLIER POLICY DOCUMENTS**

In independent India, different policy documents have focused on the professional development of teachers. Still, most of these policy documents have mainly talked about INSET activities in the name of teachers' professional development. Most of them have never moved from the concept of in-service teacher education to CPD. The term CPD was merely used as an interchangeable term for INSET without emphasising its real intent. A short analysis of recommendations made by some of the significant policy documents of education helps us to support this claim.

### ***Secondary Education Commission (1952-53)***

The Secondary Education Commission (*GOI, 1952-53*), also known as Mudaliar Commission, paid considerable attention to teachers' professional development. The Commission emphasised it in the form of in-service training of teachers through refresher courses, short-term courses in special subjects, particular training in workshops and professional conferences. Encompassing only secondary school teachers, the Commission shouldered the responsibility of in-service training on the teacher training colleges. The Commission also recommended the establishment of extension services departments to assist these colleges with their structural arrangement for teachers' in-service education.

### ***Kothari Commission (1966)***

The next significant Indian policy document Kothari Commission (*GoI, 1966*), focused on in-service training programmes for teachers' professional learning. The Commission recommended that universities, training institutes, and teacher organisers should offer refresher courses, workshops, and seminars for teachers throughout the year. Although the main focus of the Commission was on the professional development of school teachers, it also considered teacher educators and school supervisors as resource persons. The Commission also suggested that at least two or three months of in-service training will be provided to every teacher once every five years.

To promote teachers' universal coverage for in-service training programmes, the Commission suggested establishing 'school complexes' with a nodal school to arrange in-service training for teachers. The Commission also called for state government's support to promote and supervise the in-service teacher education activities in their states. In a way, the Commission threw the ball of teachers' professional development in the government's frost.

### ***Chattopadhyay Commission (1985)***

One of the most significant but mainly unsung commissions on teacher education in independent India, the Chattopadhyay

Commission also emphasised the CPD of teachers. The Commission advocated strengthening INSET's status in the country and recommended that every teacher attend three weeks of in-service training once in a block of five years. Most importantly, it suggested that this training should be linked to their career promotion (*GoI, 1985*).

### ***National Policy on Education [NPE] (1986)***

National Policy on Education (1986), the first comprehensive Indian policy on education, emphasised that teacher education is a continuous process and in-service and pre-service education are its two inseparable components (*GoI, 1986*). But, even this policy could not move from the conception of INSET to CPD. NPE, 1986 made some vital recommendations for the in-service education of teachers in the country. By making a decisive intervention for establishing strong institutional networks, this policy called to create better opportunities for teachers and teacher educators' in-service education. These initiatives were supported further by the report of the Acharya Ramamurti Review Committee (*GoI, 1990*), and Plan of Action, 1992 (*GoI, 1992*). The initiatives mainly included establishing District Institutes of Education and Training (*DIETs, in each district*), Colleges of Teacher Education (*CTEs*), and Institutes of Advanced Studies in Education (*IASEs*). These institutions were conceptualised for imparting in-service education not only to school teachers but also to teacher educators.

The NPE–1986 also recommended a comprehensive programme for teachers' professional development in the higher education sector. NPE's programme of action pointed to the crucial link between teacher motivation and the quality of education. It paved the way for establishing Academic Staff Colleges in universities across the country. The NPE also suggested organising specially designed orientation programmes in pedagogy, conducting orientation and refresher courses for serving teachers in higher education, and encouraging teachers to participate in seminars, symposia, and workshops (*GoI, 1986; GoI, 1992*).



## **National Curriculum Framework (2005)**

This Framework can be termed the first educational policy document of India that disagreed with the prevalent notion that teachers' professional development can occur in fragmented training sessions. By declaring that it is a process of lifelong learning, the Framework clearly stated, "In-service education cannot be an event but rather is a process, which includes knowledge development and changes in attitudes, skills, disposition and practices through interactions both in workshop settings and in the school" (*NCERT, 2005*).

The Framework emphasised experiential learning for teachers to become active learners and learn by reflecting on their teaching practice. But, unfortunately, despite having a changed and progressive ideology, the Framework gave more preference to in-service teacher education over CPD in its recommendations. It recommended that school clusters would shoulder the responsibility of providing in-service training to teachers. The Framework also recommended splitting the mandatory days of in-service teachers' training over the year to instantly apply what new they have learned in their teaching practice and pre-service training (*NCERT, 2005*).

## ***National Curriculum Framework for Teacher Educators [NCFTE] (2009)***

NCFTE (2009) may be termed as the first policy document that used the correct terminology for teachers' professional development, i.e., CPD. Interestingly, the Framework presented a very perplexing view of CPD. Like other policy documents, this document also interchangeably used the term CPD with in-service teacher education. However, many of the learning opportunities suggested by the Framework were quite close to the concept of CPD. The Framework hoped that teachers would follow different routes and collaborate with other teachers for professional development. It also highlighted the teachers' autonomy in professional development and advised external authorities (government, teacher training institutions, universities, etc.) to support teachers in following the suggested paths.

However, the Framework had hardly given any suggestion about how teachers can be motivated to be volunteers of lifelong learning to tread the path of CPD. In comparison, this was the first policy document in independent India that supported professional development for the entire community of teachers and other stakeholders, i.e., school teachers, higher education teachers, teacher educators, school heads, education supervisors, and library staff (*NCTE, 2009*). The Framework also intended to provide CPD opportunities for teachers serving in both government and private sectors.

### ***Justice J S Verma Commission (2012)***

This Commission, set up on the recommendations of the Hon'ble Supreme Court, emphasised the development of a new policy framework with a National Action Plan for proper implementation of INSET (*MHRD, 2012*). But with this recommendation, CPD of teachers became a farfetched idea on policy fronts. Within just three years of NCFTE 2009, policymakers just reversed its bus of teachers' development from CPD to INSET.

In a nutshell, the above discussions on the significant policy documents with particular reference to the professional development of teachers provide ample grounds to argue that:–

previous policies and policymakers have failed to establish a cohesive and complete mechanism to cater to teachers' professional development needs at different education levels.

by and large, previous educational policies remained stuck to the philosophy and terminology of 'in-service education'.

the educational world has moved from 'in-service' to 'CPD' and from 'CPD' to 'Continuing Lifelong Professional Learning' (CLPL), and in comparison, INSET still holds much importance in the Indian education system.

In light of these arguments, it will be quite interesting to learn how NEP–2020 envisions teachers' professional development.

## HOW NEP–2020 ENVISIONS CPD

It is heartening to note that in the NEP–2020, a subsection titled ‘continuous professional development’ has been added under the section ‘Teachers’. This insertion has two meanings. First, NEP recognises the importance of CPD in the lives of teachers. Second, it accepts the globally accepted terminology ‘CPD’ and has moved away from the age-old notion of teachers ‘in-service education’, i.e., INSET. The NEP–2020 delves upon various aspects of the CPD of teachers. Let’s discuss all these aspects, one by one, for an in-depth understanding and reaching an inevitable conclusion.

### *Competencies to be Acquired through CPD*

Today’s teachers are expected to play many different roles, rather than merely transmitting knowledge or information to the learners. They are supposed to contribute to the learners’ all-around development and promote meaningful and joyful learning in the classrooms. They are also expected to mould learners as future-ready and productive citizens. To accomplish such significant tasks, teachers have to have various competencies and skillsets. Realising this need, NEP–2020 proposes different CPD opportunities for teachers that covers “.... the latest pedagogies regarding foundational literacy and numeracy, formative and adaptive assessment of learning outcomes, competency-based learning, and related pedagogies, such as experiential learning, arts-integrated, sports-integrated, and storytelling-based approaches, etc” (GoI, 2020).

### *Opportunities for Engaging in CPD*

The NEP–2020 assures that teachers at all levels of education will be in the ambit of CPD. To make this happen, NEP–2020 aims to make provisions for making CPD available to different teachers and noted: “Teachers will be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their professions. These will be offered in multiple modes, including in the form of local, regional, state, national, and international workshops as well as online teacher development modules” (GoI, 2020, p.22).

However, NEP–2020 remains silent on whether the benefit of CPD will be passed on to both public and private teachers or only teachers working in government institutions will be its prime beneficiary. Here, it is vital to note that existing CPD schemes, particularly in the schooling sector, mainly support the teachers working in government or government-aided institutions. The teachers of private institutions have to look at and arrange CPD for their initiatives and expenses.

The Policy also wishes that teachers must enhance their role and act as facilitators for learners. It is expected that teachers will facilitate students' active engagement with the content, with peers, and with the teacher as well. To realise this vision, the policy states “Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools”.

NEP–2020 also envisions that online platforms will help teachers share ideas and best practices related to their professions. Regarding the broader usage of technology for CPD purposes, the policy suggests, “The use of technology platforms such as SWAYAM/DIKSHA for online training of teachers will be encouraged, so that standardised training programmes can be administered to large numbers of teachers within a short span of time” (*GoI, 2020*).

The policy also states that higher education teachers will be provided with opportunities to get mentoring from expert and experienced teachers. This suggested initiative aims to help teachers discuss their professional concerns and get suitable answers from those who know the system from inside and have experienced similar situations or problems. Mentioning this scheme, the policy highlights, “A National Mission for Mentoring shall be established, with a large pool of outstanding senior/retired faculty – including those with the ability to teach in Indian languages – who would be willing to provide short and long-term mentoring/professional support to university/college teachers” (*GoI, 2020*).

### *Expectations from Teachers Regarding CPD*

NEP–2020 expects that every teacher, whether it is working in school education or higher education, must engage in sufficient CPD activities. This intention may be in line with the provisions in some countries where participation in CPD activities for a particular period in a year is mandatory for every teacher. Making this intent more clear, NEP–2020 states, “Each teacher will be expected to participate in at least 50 hours of CPD opportunities every year for their own professional development, driven by their own interests” (*GoI, 2020, p.22*).

As another exciting note, NEP–2020 aims to bring school leaders or principals into the ambit of CPD. This move is guided by research evidence claiming that leadership acts as a decisive factor in enhancing the quality of teaching-learning. Counting on this observation, the NEP–2020 observes, “School Principals and school complex leaders ... will also be expected to participate in 50 hours or more of CPD modules per year, covering leadership and management, as well as content and pedagogy with a focus on preparing and implementing pedagogical plans based on competency-based education” (*GoI, 2020, p.22*).

NEP–2020 expects that school leaders regularly participate in leadership/management workshops and online development opportunities to continuously improve their leadership and management skills. In the Policy, the other expectation from school leaders is to share their best educational leadership and managerial practices with colleagues.

It also suggests that higher education teachers must also get involved with CPD activities like school teachers and leaders. NEP–2020 states that existing practices of CPD for higher education teachers (i.e., orientation programs, refresher courses), provisions (i.e., training through Human Resource Development Centers of different Universities), and opportunities (e.g., online platforms like SWAYAM) will continue. Claiming that such initiatives will be strengthened further, NEP–2020 declares, “In-service continuous professional development for college and university teachers will

continue through the existing institutional arrangements and ongoing initiatives; these will be strengthened and substantially expanded to meet the needs of enriched teaching-learning processes for quality education.” (GoI, 2020, p.43).

### *Incentives for Engaging in CPD*

The tragedy is that the Indian education system hardly differentiates between a good and an average teacher. Those who excel in the profession and ones who are not as competent get the same salary, similar promotion benefits, and equal career enhancement opportunities. There is hardly any mechanism to motivate and incentivise those who are regularly engaged in CPD and doing outstanding work in their classrooms. It seems that NEP–2020 has taken note of this situation and would like to bring a change. As a measure of this effect, the Policy suggests a two-tier process. First, it wants to come up with a set of professional standards for the teachers. Talking about this issue, the policy highlights: “A common guiding set of National Professional Standards for Teachers (NPST) will be developed by 2022.....The standards would cover expectations of the role of the teacher at different levels of expertise/stage, and the competencies required for that stage. It will also comprise standards for performance appraisal, for each stage, that would be carried out on a periodic basis” (GoI, 2020).

Thereafter, the Policy suggests that those who will follow these standards, do justice to their profession, and are engaged with CPD regularly will be treated in a way different from others. Making this intent clear, the policy states, “The NPST will also inform the design of pre-service teacher education programmes. This could be then adopted by states and determine all aspects of teacher career management, including tenure, professional development efforts, salary increases, promotions, and other recognitions. Promotions and salary increases will not occur based on the length of tenure or seniority, but only on the basis of such appraisal” (GoI, 2020).

Based on all these recommendations, it may be noted that NEP–2020 envisions CPD more holistically and comprehensively than

previous policies. Unlike earlier policy documents, NEP–2020 moved away from the notion of INSET to CPD. This move is evident from two-fold suggestions proposed by the policy. First, the policy suggests that teachers must come forward and take responsibility for their development. And second, the policy suggests that existing provisions and opportunities for teachers' CPD will be strengthened further. Besides, the policy also expects that every teacher, whether in schooling or higher education, will get engaged in CPD and benefit from it.

## CONCLUSION

There is a famous saying that only a lit lamp can lighten another lamp. This saying exactly fits with the lives of teachers. Only those teachers who are committed, well-versed in their subject, able to understand learners, and proficient in pedagogy can impart meaningful teaching. But this is easier said than done. Teachers have to keep learning throughout their lives to help learners in their all-around development. And engaging in CPD activities is the most accepted and practiced way to support teachers to remain professionally fit and motivated. Unfortunately, CPD has been perceived and practiced in a significantly narrower way so far in the higher and school education system in India. We can hope that the measures suggested in the NEP–2020 will be helpful to review the existing CPD policies and practices. And as a follow-up, improved CPD opportunities will be available for teachers working in different educational sectors (i.e., school and higher education) and various types of institutions (i.e., government, government-aided, and self-financed).

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**HOLISTIC AND MULTIDISCIPLINARY EDUCATION,  
AND PROMOTION OF INDIAN LANGUAGES,  
ART AND CULTURE**



# HOLISTIC LEARNING IN HIGHER EDUCATION INSTITUTIONS IN INDIA A SUSTAINABLE APPROACH

Rajita Kulkarni

*The system of education in our country and across the world is witnessing tremendous growth in terms of offering multidisciplinary opportunities of courses for the students to learn. E-learning platforms have been witnessing an exponential uptake since the pandemic outbreak. Keeping abreast of the tasks of Industry 5.0, the NEP–2020 envisioned to “create a model of education aiming not just on the cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills.” This article focuses on the changing demands of Industry 5.0 from our students and proposes a new model of holistic education.*

## PRELUDE

विद्यां ददाति विनयं विनयाद् याति पात्रताम् ।  
पात्रत्वात् धनमाप्नोति धनात् धर्म ततः सुखम् ॥

*Education should lead to sensibility, Sensibility to the attainment of character and qualification, from that comes wealth which leads to good deeds, which ultimately leads to joy.*

*The real purpose of education is to create a sense of joy, bliss, and happiness in living. Educators, teachers, policymakers and leaders in the education sector need to reflect on how we are the enablers for students to reach the ultimate goal of education.*

Higher education in India is in the process of large-scale transformation. After three decades, the National Education Policy–2020 (NEP–2020) was launched, indicating the importance and priority accorded to education in India’s to become a global leader

across fields. The policy draft suggests: “Education is fundamental for achieving the full human potential” and in its true sense, the NEP–2020 aims for holistic universalisation of education in the country. A visionary policy aimed at disrupting norms, accelerating the speed of innovation, making inclusive education a reality and creating an aspiration for taking education to the next level—the NEP will make 2020 a landmark year for Indian education for many decades to come.

## **REPERCUSSIONS OF PANDEMIC ON EDUCATION**

The year 2020 was also a watershed year because the COVID-19 pandemic attacked globally and changed the way we work, learn, communicate, and live as a human society. Human-to-human connections have been replaced by the virtual world, working from home, and studying from home became the norms. The world of business and industry was disrupted like it had not experienced in the last century. Though some countries of the world seem to be moving back to normalcy, many are still in the grip of the second or third waves of the pandemic, plagued by vaccine deficiencies and outages.

All this is rapidly changing the demands of the world from students. What worked in the world yesterday may not work tomorrow. In the light of the above, how can Higher Education Institutions impart holistic education to students, preparing them to be successful, humane, and happy citizens of the world? This article focuses on the changing demands of Industry 5.0 from our students and proposes a new model of holistic education.

## **EDUCATION 5.0: RETHINKING AND REALIGNING WITH INDUSTRY**

The NEP–2020 states, “it is essential that an identified set of skills and values are incorporated at each stage of learning” for the holistic development of learners.

A recent report by Mckinsey suggests that by 2022, about 75 million current jobs will be displaced and over 133 million new roles will be created. Currently, we don't know the top 5 jobs of 2030: developments in Artificial Intelligence, Machine Learning, and Robotics are changing the job landscape, and to top it all, the pandemic has recalibrated, disrupted, accelerated, and turned on its head the way we live, the way we work, the way we study, and most importantly the way we relate to each other as human beings. The last year has shown us that the most agile, resilient, and adaptable have survived. The industry, as well as society expects from our students that they think critically, they should be creative, innovative, able to communicate and collaborate.

Industry 5.0 will have the following five expectations from our students:

- **Multi-stakeholder Sensitivity:** The world today is a totally interconnected and intermingled place and it no longer serves us to think of our own interests in a silo. A company can have sustainable growth only if it follows a collaborative approach and considers the welfare of all its stakeholders. Students will need to have the ability to cater in the best possible way to every stakeholder of the organisation—customers, suppliers, shareholders, local communities, environment, regulators, lawmakers and more. Multi-stakeholder sensitivity will require students to have a broad mindset, an inclusive attitude, a deep ability to listen, and a prejudice-free mind.
- **Multi-generational Adaptability:** Today's workforce is more complex than ever, making any single demographic lens of limited value. The Global Human Capital Trends Survey 2020 conducted by Deloitte suggests that 70 percent of organisations believe that leading multi-generational workforces is very important for their success, but only 10 percent are ready to address this trend currently. The millennials or the younger generation today are happy among their peers but unable to navigate multi-generational setups. Students need to learn that the big businesses all across the world are all multi-generational and they need to develop the ability to work together in a

multi-generational team. This will need them to develop communication and collaboration skills and deepen their ability to accept and adapt.

- **Multi-cultural Relatability:** India is a unique country. It is as big and diverse as a continent. This size and scale bring forth incredible diversity in culture, language, tradition, and lifestyles. Workplaces with people from different states of India are vibrant platforms for this cultural diversity. This gets further amplified when workplaces become international. The current trends of multi-country, multi-religion, multi-language virtual workplaces will be more a norm in the years to come. The ability to respect diversity and use it as a collaborative springboard will be a key differentiator for longterm success.
- **Multi-career Possibility:** The world of work is changing rapidly, and the age of the multipotentiality has arrived. Advances in technology – Automation, Robotics, Artificial Intelligence – mean that many types of work are disappearing, as is the old-fashioned idea of ‘a job for life’. Pandemic aside, it is said that the average life span is going to be 100+ years and a person might land up having 6 careers throughout his/her lifetime. Our students need to develop the ability to learn and the elasticity for multi-career possibilities.
- **Multi-choice Opportunity:** Gone are the days when the choices of courses available for students were limited. The system of education in our country and across the world is witnessing tremendous growth in terms of offering multidisciplinary opportunities of courses for the students to learn. E-learning platforms have been witnessing an exponential uptake since the pandemic outbreak. Statistics from Coursera depicts that out of 8 crore learners currently on Coursera globally, 1 crore are from India.

Keeping abreast of the tasks of the Industry 5.0, the NEP–2020 envisions “to create a model of education aiming not just on the cognitive development, but also building character and creating

holistic and well-rounded individuals equipped with the key 21st century skills.” It also states that the “pedagogy must evolve to make education more experiential, integrated, inquiry-driven, discovery-oriented, learner-centered, discussion-based, flexible, and, enjoyable.”

It calls for “step-wise reforms across all stages of teaching-learning process to accelerate the movement from the current culture of rote learning towards real understanding and towards learning how to learn.”

### **STRATEGIES OF BUILDING RESILIENCE IN THE EDUCATION SYSTEM THROUGH NEP-2020**

The guidelines of NEP-2020 necessitate the creation of a multifaceted ecosystem in HEIs for capability enrichment and skill development of the students to meet the industry expectations.

Moreover, the pandemic outbreak has resulted in a paradigm shift in the education sector across the world leading to various challenges open to be addressed by academicians and educationists. The University of Michigan Healthy Mind study in 2021 revealed that 83 percent of students reported academic impairment due to mental health and 47 percent of students reported depression & anxiety issues. The serious repercussion of the pandemic necessitates HEIs to have a multi-pronged approach towards creating an ecosystem of nourishing intellectual, emotional, and spiritual quotients in students so that both the discovery of ‘self’ from within and its dynamic expression outside, are facilitated.

The topic of Holistic Education has also gained momentum across the society of Policymakers, Thought Leaders, and Seasoned Academicians throughout the length and breadth of the country. Building an integrative and holistic model of education rests upon the understanding of the core essence of education, which inculcates wisdom and humanity in the hearts and minds of learners. As rightly pointed out in the policy document of NEP-2020, “Knowledge is a deep-seated treasure and education helps in its manifestation as



the perfection which is already within an individual. All aspects of curriculum and pedagogy call for reorientation and revamping to attain the critical goal of creating a holistic education system.”

## MODEL FOR HOLISTIC EDUCATION

The building blocks of Holistic Education thrive to fulfill the aim of education through the Discovery of Self and Professional Excellence which are considered to be the main pillars of the Higher Education System. Educators today are responsible for the intellectual, mental, emotional, and spiritual development of students which calls for a multidimensional and multifaceted approach in the system of education.

The author has decomposed the implications of NEP–2020 into various pathways and conceptualised the ten key building blocks that underpin the model of the holistic education system in the country:

1. **Purpose Driven:** Is our education system purpose driven? Is it only meant to give the students a degree or provide them a job with a certain Cost to Company (CTC)? Or is it ultimately to cherish and imbibe knowledge and integrate values? Jerry Pattengale, who coined the phrase “purpose-guided education”, suggested that it prioritises intrinsic motivation and helps students to become more engaged in learning experiences through connecting their beliefs and life goals to curricular requirements. We need to reflect on how we are creating an ecosystem to help our students discover their life purpose and provide them with the means and platforms to move towards it.
2. **Full Brain Engagement:** We have traditionally spoken about the right brain/left brain engagement. We as educationists now need to move the focus to full brain engagement which also includes the midbrain of the students. In the Programme on Art of Living is taught ‘*Medha Yoga*’ Programme to the children starting from the age 6 years which nourishes their mid brain and results in the full blossoming of their consciousness this

indeed is the seed of creativity, intuition, and innovation. There are cases where enversised designed by Spanish childrens downloaded Sanskrit shlokas Sri Sri Ravi Shankar from memory without any formal education in it. There are mind-boggling instances where children are able to read with blindfolds.

There are many as per psychologists faculties of our consciousness that can be accessed and utilised for the holistic development of students.

3. **Full Sensory Engagement:** Auditory, visual, and kinesthetic abilities of the students should be utilised fully for learning. Students may have a preferred sensory learning style. They may opt for one sense over another depending on the subject sometimes. Some students find it easier to learn through hearing (auditory), some through seeing (visual), and some through touch and movement (kinesthetic). We need to reflect on how much of it is combined in a way that is personalised for the capacity, capability, and preferences of students.
4. **Multi-mode Learning:** The future of learning is blended learning. Combining classroom teaching with technology is no longer a fad; it is essential for survival. Blended learning has the potential to harness the trends implied by the recent changes in the education sector and reshape the basic operations of educational systems. By integrating new forms of online instruction, learning management systems, and increasingly rich device experiences, blended learning can enable more dynamic and rich learning experiences.
5. **Focus on Capability:** Model education system should provide a platform for the development of conceptual knowledge and skills among students. The reality of the world today necessitates learning based on the enhancement of capability. It is important that all Academic knowledge gets translated into employable skills, making education practically relevant and industry aligned. The University Grants Commission has also envisaged the roadmap of capacity building among students

in HEIs by creating Learning Outcomes Based Curriculum Framework (LOCF) for various programmes.

6. **Full Focus Learning:** HEIs are required to evolve the teaching pedagogy to make education more experiential, integrated, inquiry-driven, discovery-oriented, industry focused, discussion-based, flexible, and also enjoyable. Internships and on-the-field training are imperative to enhance the learning experience of the students. Academia and Industry collaboration can foster new avenues of learning for the students.
7. **Balanced Learning:** Institutions should create an ecosystem to develop resilience amongst the students which enable them to learn the ability to balance their mind, emotions, and feelings. Education must build a strong character in students which enables them to be rational, compassionate, caring, and at the same time professionally driven. This can be achieved by introducing the students to *Yoga, Pranayam, Sudarshan Kriya*, and meditation. Research studies at Yale University and Harvard University present compelling evidence that the emotional and mental well-being of students improves by practicing *Sudarshan Kriya* and meditation on a regular basis.
8. **Continuous Learning:** The pursuit of knowledge is meant to be ongoing throughout the life of an individual. A research study published in Forbes suggests that lifelong learning can lead to a more fulfilling and healthier life in the long run. With the advancement in healthcare, the average lifespan of people is expected to increase from 90-100 years which will mean that as adults we will have up to six careers in a lifetime. Universities and HEIs need to develop lifelong learning programs, with specific focus to mid and senior age learners. The concept of lifelong and continuous learning would facilitate the meeting the requirements of the Multi-Career possibility.
9. **Ancient Vs Modern Learning:** As educationists, we must reflect upon the way the students associate themselves with

the teachings of ancient scriptures as well as modern studies of cutting-edge technologies. Knowledge of the past can create a strong foundation for learning needed for the future. The stronger the roots, the healthier the fruits. A model education system is one that ensures a healthy blend of both: eastern philosophy and tradition with the cutting edge, western (scientific) temperament.

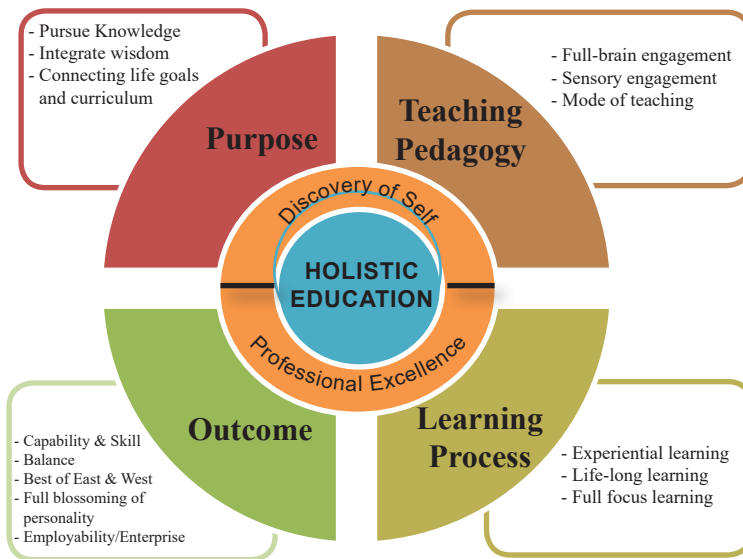
10. **‘Full Being’ Learning:** We generally think of ourselves as the body, but we are much more. The environment or our surroundings is our first body because if something bad happens around us, we automatically feel agitated. After the environment/surroundings, comes the body, mind, thoughts, feeling, and then the self. An education system that focuses on the full blossoming of the being is meant to have a lasting impact not just on the learner but also on her/his family members, colleagues, society, and community as well. This will nourish the different subtle levels of existence of the human being, building full nourished confidence and a strong stable personality.

The model of Holistic Education as depicted in figure 1 rests upon four key indicators, namely purpose, teaching pedagogy, learning process, and outcomes. The fulfillment of each indicator will be helpful for an HEI to create an ecosystem of Holistic Education for its students.

The overarching model of Holistic Education has the strength to empower the students to develop multi-stakeholder sensitivity as experiential learning augments the opportunities for the students to interact with the stakeholders of various organizations as part of their course curriculum. It also seeks to encompass and integrate the purpose of developing good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values having multi-generational adaptability and multi-cultural relatability for building an equitable, inclusive, and plural society, which is the spirit of NEP–2020.

Moreover, such a model of Holistic Education seeks to imbibe the highest standard of multidisciplinary teaching and research built by the ancient Indian Universities like Takshashila, Nalanda, and Vikramshila University enabling the students to have the multi-choice possibility in terms of selecting the courses of study as well as instill a variety of skills in them to get well-versed in multiple careers.

**Fig -1 Model of Holistic Education**



As suggested in NEP–2020, the model of holistic education aims to integrate the boundaries of various disciplines of education. The path of re-engineering the education system from the step of understanding the purpose of education to reaching the planned outcomes of education has to be flexible enough to allow the breaking of the existing silos. It calls for autonomy and decentralization at the level of regulatory bodies to empower the HEIs.

### **HOLISTIC EDUCATION AND EXCELLENCE: A CASE OF SRI SRI UNIVERSITY**

Sri Sri University believes in the principle ‘*Yogah Karmasu Kaushalam*’ (yoga brings skill in action).

Excellence in life is achieved when there is union and harmony between mind, body, and breath. Excellence is an academic process of motivating the students to learn in ways that make a sustained, substantial, and positive influence on how they think, act, and feel which defines the core values of 'Learn-Lead-Serve'. Excellence can be measured by one's inner strength to handle situations with balance and ease. Emerging as a centre for premium education in India, Sri Sri University is setting benchmarks of excellence by offering holistic education that combines Western innovation with the ancient values and wisdom from the East.

The University fosters holistic development amongst the students through the following pillars:

***Sadhana***: At Sri Sri University, the students are offered a powerful Induction Programme that equips them with the tools like yoga, pranayama, and meditation to enrich their intelligence/intellectual quotient, emotional quotient, and spiritual quotient.

During the weeklong Induction Programme, the students participate in 'YES!+ (Youth Empowerment & Skill Workshop) which is a flagship Programme offered by The Art of Living especially for Youth. YES!+ is a brilliant mix of antiquity and the contemporary. It is a smooth blend of ancient wisdom, *yoga*, *pranayama* (breath control), and meditation, fused with contemporary intellectual exchanges, music, and games. The Programme charges the students with a fresh breath of vigor, enthusiasm, excellence, and responsibility and helps them to discharge stress, inhibitions, bad habits, and barriers.

To keep pace with the changing dynamics of the world outside, the students practice daily *Sadhana* together in the morning which not only aids in mental clarity but also makes them confident, courageous, collaborative, creative, and compassionate.

Sri Sri University also offers a unique and profound credit based Course called 'Happiness Connect' to its students which enables them to excel with a rational perspective and a peaceful mind. The course aims to instill human values, ethics, and cultivate skills to meet professional responsibilities with clarity of mind, purity in heart, and sincerity in action. It also allows them to explore and discover from

within the essence of education which is also a part of the core of NEP–2020. During the academic year 2020-21, over 95 percent of the students in the University opted for the Programme and had demonstrated shifts in their personalities in terms of dynamism and positive outlook.

**Seva:** For the educated youth to become the flag bearers of important societal changes, it's necessary that they grow in an environment witnessing social responsibility at the core of individual and organisational development. Keeping that same tone of faith, Institutional Social Responsibility (ISR) is of topmost priority Sri Sri University. The University believes that key changes occur through community participation and societal transformation. Sri Sri University nurtures leaders of the next generation with the mindset to serve. The students participate in various community development programmes, which not only give them a platform to exhibit classroom learning in terms of organising, team building, time management, etc. but also make them sensitive and compassionate human beings. The University has collaborated with various organisations and corporate houses to provide training in Leadership, Women Empowerment, Agriculture, Entrepreneurship, and Environment Protection among others to the local village community. Under the Sri Sri Koushal Vikas (SSKVK), Schneider Solar Electrician Training Center was set up in the premises of Sri Sri University in association with Schneider Electrics wherein over 900 trainees were imparted skill development training in different sectors like solar electrification, security guard training, hospitality, housekeeping, to name a few. A training and skill development center under the name VIDYA (Construction and Skill Training Centre) was formed under the PMKVY Project of the Government of India and SSRDP. It focuses on providing vocational skill development training like masonry, bar bending, and steel fixing for the underprivileged and school drop-out youths.

**Synergy:** Sri Sri University had conceptualised since its beginning the value of interdisciplinary studies which is also the mandate of NEP–2020. The impressive list of 50+ Programmes (including

undergraduate, post-graduate, and doctoral programmes) offered by Sri Sri University in diversified fields ranging from Architecture to Health & Wellness, from Management Studies to Arts, Culture, and Indic Studies, from Agriculture to Artificial Intelligence is a testimony to its commitment to developing a centre of multicultural studies as envisaged in NEP-2020. Sri Sri University has taken the following initiatives in coherence with NEP-2020:

- **Integrated System of Medicine**

Sri Sri University has conceived from the very beginning the various aspects of the holistic and integrative system of medicine by setting, Programmes in Osteopathy, Yogic Sciences, and Naturopathy under the Faculty of Health & Wellness which shall be integrated with Allopathic Hospital.

- **Faculty of Emerging Technologies (FET)**

As technological innovation and advancements have brought about massive societal change, so to groom the student as per the guidelines of NEP-2020 along with the needs of ongoing Industry 4.0 and the incoming Industry 5.0, SSU has launched the *Faculty of Emerging Technologies (FET)* to develop technology leaders who are industry-ready in the field of Business Analytics, Artificial Intelligence, Machine Learning, etc.

- **Sri Sri School of Cyber Peace**

Sri Sri University has also signed an MoU with Cyber Peace Foundation for the creation of Sri Sri School of Cyber Peace, which is the first of its kind in the world for offering Programmes in the field of Cyber Security, Cyber Defence, Digital Forensic & Incident Response, etc. These Programmes will have a 65 percent focus on practical hands-on experiential learning to make the students industry-ready which is the mandate of NEP-2020.



- **Faculty of Contemplative and Behavioural Sciences**

In 2020, Sri Sri University pioneered in the creation the Department of Contemplative and Behavioural Sciences (DCBS) under the *Faculty of Contemplative and Behavioural Sciences* which is one of its kind in the world. In consonance with the NEP–2020, DCBS is all about upholding, nurturing, and integrating (research in) the rich multidisciplinary global heritage of ‘contemplative paradigms’ and ‘ancient Indian Knowledge traditions’ with ‘modern approaches’ in order to build a critical mass of practitioners, through scholarship, training, and field practice, embarking on a journey towards Self-realization.

**Satsang:** Satsang is the most obvious exemplification of our commitment to make life a celebration. The students of Sri Sri University come together every week to organise satsang. It gives the students an opportunity to sing and dance and reflect on the deeper questions that give meaning to life. The enriching experience of such togetherness transcends cultures and brings students from various backgrounds, states, and countries together to enjoy music, celebrate life, and meditate. Such soulful interactions bring together the scattered minds and let them experience a higher state of consciousness.

**Silence:** Silence is the seat of innovation and is an important foundation for our actions to be right and successful. This awareness often gets lost in the middle of our noisy and busy lives. At Sri Sri University, every academic year 8 is commenced with 3 days of Silence Retreat wherein students, staff, and Faculty members dive deep within themselves by observing silence, powerful breathing exercises, and timeless wisdom to relax, refresh, and rejuvenate.

**Symbiosis:** Sri Sri University cultivates the ecosystem of ‘*Vasudhaiva Kutumbakam*’ wherein belongingness is cultivated amongst the students towards each and everything existing in the world. Students learn to embrace others as their very own in such an

environment. The Sri Sri Gurukul and Sri Sri Gaushala built at the campus are testimony to its commitment to nurturing this symbiotic relationship.

- **Sri Sri Gurukul**

With the vision and mission of reviving & sustaining the ancient Indian tradition of Vedic wisdom, Sri Sri Gurukul has been established in the premises of Sri Sri University wherein, 39 students from Odisha, Bihar, Chhattisgarh, and North East are learning Samveda, Atharveda, and Yajurveda. Alongside the Vedas, they also imparted education from the general curriculum. (students of Sri Sri University play a great role in teaching general subjects to the students of Gurukul). It's a beautiful amalgamation of the values and cultures of the east and the west. The University aids in providing accommodation, meals, education, stationery, clothes, and other basic requirements for the students of Gurukul. Daily chanting of vedic *mantras* helps to keep the environment *Sattvik* (spiritually uplifted) and spread positive vibrations in the campus.

- **Sri Sri Gaushala**

Sri Sri Gaushala was started in 2020 with the aim to revive the gaushala system as well as preserve indigenous cattle breeds, the Sri Sri Gaushala at Sri Sri University today houses 42 indigenous breeds of cows and calves. They provide pure A2 milk, and other dairy products along with manure for organic farming.

***Spirituality:*** Sri Sri University envisions to impart holistic and value-integrated education in order to develop visionary thinkers with a social consciousness to lead and precipitate inevitable changes, with the summative call learn-lead and serve. The world today needs spiritually Smart citizens to bring harmony and create a one-world family which is interconnected and interdependent. The University offers the students various avenues to explore and nourish their inbuilt virtues which have the capacity to impart true intelligence and dynamism.

***Shanti & Samriddhi:*** Sri Sri University believes in the complete prosperity of an individual. The prosperity of state of mind is the first step toward the full blossoming of the consciousness of an individual. Sri Sri University has adopted a unique approach where academics effortlessly blend with spirituality. The modern and well-researched curricula, seasoned faculty, industry exposure, innovative pedagogical practices, state of art infrastructure make the academic process engaging and fruitful along with giving opportunities to the students to explore themselves from within and find the bigger purpose of their life.

## CONCLUSION

*“Education is often seen as only lit path in the pursuit of happiness. Only an education that can nourish inbuilt virtues can impart true intelligence.”*

***Gurudev Sri Sri Ravi Shankar Ji***

The implications of holistic education in building our nation is impeccable. The holistically blossomed students of today will portray themselves as thought leaders of tomorrow. India has had a long and illustrious history of a holistic education system. In order to place Indian Universities on the global map, we need to collectively nurture the ecosystem of holistic education and enhance it rigorously. Let us work towards recreating the history of Nalanda and Takshashila University and offer our rich heritage of the best education system for the world to explore.

# NECESSITY OF PARADIGM SHIFT IN SANSKRIT LEARNING NATIONAL EDUCATION POLICY-2020 PERSPECTIVES

**Alaka Das**

*Languages do not survive on their own; they live in the minds and hearts of people. According to UNESCO, any language spoken by less than 10,000 people is considered 'potentially endangered'. The number of people speaking Sanskrit is very meagre to save it from being an endangered language. Spoken since 1500 BCE, Sanskrit was the common language of the Indian subcontinent for over 3000 years. All our religious traditions, rituals and ancient Indian thoughts are recorded in Sanskrit literature. Sanskrit is one of India's 22 official languages. In this essay, an effort has been made to highlight the education policy recommendations and suggestions in terms of promotion of Sanskrit, with a special focus on the National Education Policy-2020. The objective is to analyse the education policy recommendations made for promotion of Sanskrit in educational institutions of India.*

## PRELUDE

Language remains a powerful tool in the evolution and development of any culture. Sanskrit is a language that belongs to the Indo-Aryan group and is the root of many Indian languages that contain great knowledge and wisdom. Spoken since 1500 BCE, Sanskrit was the common language of the Indian subcontinent for over 3000 years. All our religious traditions, rituals and ancient Indian thoughts are recorded in Sanskrit literature. Sanskrit is one of India's 22 official languages. However, a language that is acknowledged to be a structured and scientific language, is spoken as their primary language only by 14,000 people, as per census 2001, which increased to 24,821 as reported in the 2011 census. It is one of the official languages in only

one Indian state, Uttarakhand in the North. In schools, it is offered as an optional language, with most students' preferring to choose French, German or any other language. Here, too, the only aim of the student is to secure the required marks.

Besides, due to some misinterpretation, Sanskrit is sometimes incorrectly associated with Hindus and viewed as a language of a particular religion, just the way Urdu is wrongly associated with Islam, despite the fact that 'Urdu' originated and developed in India. From the job perspective, Sanskrit as a language of study is not seen as lucrative for students as other foreign languages are. As a result of which, Sanskrit is not duly recognised and is on the verge of extinction in its own native land!

In the Indian context, language education occupies a prominent place in the overall education policies. Right from the pre-independence period till now, education policies that are framed and implemented in India have a crucial impact on the development and learning of Sanskrit.

### **SIGNIFICANCE OF THE STUDY**

Languages do not survive on their own; they live in the minds and hearts of people. According to UNESCO', any language spoken by less than 10,000 people is considered 'potentially endangered. The number of people speaking Sanskrit is too meagre to save it from being an endangered language. In India, Sanskrit is used for various religious and ceremonial rites and rituals by Hindus, Buddhist, and Jains. The psycho-social reality of 'benefit or job opportunity' from learning Sanskrit in the minds of the people makes the situation more critical. Many scholars like Sheldon Pollock, have argued that Sanskrit is indeed a classical language – a dead language – and argued that Sanskrit is not growing in terms of phonology, morphology, syntax, etc. which are the index of a living language.

Against all these odds, we need to keep in mind that Sanskrit literature is the vast repository of Indian knowledge of philosophy, science and technology, astronomy and architecture, medicine and metallurgy,

agriculture and scripture, mathematics and management, economics and ecology, geography, religion and spirituality, painting and theatre, dance and music. To make a connection between ancient and modern knowledge, to explore the ancient Indian knowledge base contained in the ancient texts, to protect our own heritage and intellectual property, to create new avenues of innovation and to lead India in progress, the need to learn ‘Sanskrit’ becomes more crucial than ever before. Sanskrit needs to be revived in terms of speaking, writing, and learning, and also as one that has job avenues available.

Right from the pre-independence period, different Education Committees and Commissions have been initiated to formulate frameworks and forward suggestions for the development of education in India that have an impact on the language learning also. Instruction in Sanskrit is also not an exception to that. However, from the statement made by the National Education Policy–2020 (4.22.5). “Indian languages have not received due attention and care due to which country lost over 220 languages in the last 50 years. UNESCO has declared 197 Indian languages as ‘endangered’. Even those languages scheduled in eighth schedule of the constitution of India are also facing serious difficulties on different fronts.” One can realise the deplorable condition of language learning in India, particularly, the Sanskrit.

The National Education Policy recommendations on language learning, particularly Sanskrit. An account of the earlier policy recommendations on learning of Sanskrit will provide an insight into the understand pros and cons of learning Sanskrit. It is expected that the reflections from the changing dimension of policy documents on teaching of Sanskrit will enable us to bring newer perspective towards Sanskrit language learning and policy implementation that are envisaged in the National Education Policy–2020.

## **ANALYSIS AND DISCUSSION OF EDUCATION POLICIES OF THE PRE-INDEPENDENCE PERIOD**

In pre-independent India, initiatives for revival and promotion of Sanskrit were initiated voluntarily by the Theosophists (1891), also

by *Bharatiya Bidya Bhavan* (1938) in India. However, such voluntary initiatives could not check adverse effects of the Government policies in education of India, particularly, the learning of Sanskrit. Many scholars blame colonisation for the deplorable condition of Sanskrit. Lord Macaulay in his *Minute* (1835) introduced English and Western concepts to education in India adding, that the Indian natives are interested in learning English, not Sanskrit or any other language and English is richer than native Sanskrit literature. And instruction of Sanskrit for higher education in India was changed to English: "... we ought to employ them in teaching what is worth knowing; that English is better worth knowing than Sanskrit or Arabic; that the natives are desirous to be taught English, and are not desirous to be taught Sanskrit or Arabic, that neither is the language of law, nor as language of religion, have Sanskrit and Arabic any peculiar claim to our engagement; that it is possible to make natives of this country thoroughly good English scholars, and to this end our efforts ought to be directed."

Lord Macaulay, who was Secretary to the Board of Control and looking into the affairs of India, advocated the withdrawing offinancial support for publication of books in Sanskrit, which is why support for traditional educational institutions were thus stopped. As a result of this policy decision, the indigenous educational institutions where Sanskrit was studied suffered a lot, causing irreparable damage to Sanskrit instruction. Sanskrit, the language of instruction in higher education in India, was changed to English. Few British scholars had taken interest in translation of ancient Sanskrit Scriptures to English that were interpreted in their own way and the top position of Sanskrit laurels were occupied by British. Even scholars of Indian origin used to study those translated literatures, which were also used for future references in their twisted form (*Goswami, 2012*).

## POST INDEPENDENT PERIOD AND EDUCATION POLICIES

After independence, at the time of framing of the constitution, the issue of Sanskrit' as the official language of the country was debated. Pandit Jawaharlal Nehru realising the importance of Sanskrit opined,

“If I was asked what the greatest treasure which India possesses is and what is her finest heritage, I would like to answer unhesitatingly- it is the Sanskrit language and literature, all that it contains.”

Dr Ambedkar wanted Sanskrit to be the official language of India. At the time of move in the Constituent assembly, signatory of the draft amendment motion to declare Sanskrit’ as official language of India, Dr Ambedkar demonstrated how the language is spoken easily by actually conversing in Sanskrit and highlighted the need to accept Sanskrit as an official language of India, though it was resolved that the nation should wait for more time to do that. Article 351 of the Constitution also directs that wherever necessary or desirable, for development of the Hindi vocabulary, it shall be expanded primarily based on Sanskrit and secondarily on other languages. Though there is a constitutional provision, in reality for different reasons the same was not followed.

### **National Education Policy, 1948**

Several commissions and committees have been formed in independent India, and recommended policy provisions on language along with learning of Sanskrit.

The first National Education formed in the post-independence period, the University Education Commission recommended the classical language as ‘optional’ in schools from classes 9 to 12. Though the Commission emphasised the importance of Sanskrit in wider terms, it did not include Sanskrit in the school curriculum as a compulsory language for study.

### **Sanskrit Commission, 1956**

The Sanskrit Commission of 1956-57 commissioned by Ministry of Education and Culture and headed by MK Azad, strongly pitched for education of Sanskrit at the school level. The Sanskrit Commission, formed by the Government of India, in its report states that as a classical language not only in India, but in a large part of Asia, Sanskrit remains the binding force among people of



this diverse country and it specifically mentioned that intensive study of Sanskrit’ needs to be facilitated. The panel strongly appealed for the compulsory education of Sanskrit at the school level. It stated in its report, “The aim of education—particularly of general education—can never be *‘thorough knowledge or nothing at all’*. Provision must certainly be made even in secondary schools for a specialised study of Sanskrit. But the compulsory General Course in Sanskrit would be intended mainly to give a pupil the necessary link into his cultural past, to arouse in him an interest in the language and literature of his ancestors, to afford him a wholesome training of mind and character, and to inculcate in him real respect for pure learning.” The Commission also suggests that, barring certain exceptions that Sanskrit should be made a compulsory subject in schools. It stated, “One need not fight shy of the element of compulsion here. It is indeed wrong to suppose that compulsion invariably breeds distaste and unpopularity. Something has to be made compulsory, because no one would ever think of leaving the choice of subjects to the immature judgement of a child. As Dr Radhakrishnan once said, the aim of education should be not only to teach a boy what he wants, but also to make him want what we teach him.”

The Sanskrit Commission had offered three preferences at the school level, especially from class seven. From classes seven to eleven:

- i) Mother tongue/regional language, English and Sanskrit;
- ii) Mother tongue/regional language, Hindi/modern Indian Language and Sanskrit; and
- iii) Modern Indian Language and Sanskrit for Hindi speaking areas.

The Commission suggested a four-language formula to accommodate Sanskrit. There was another preference in the name of combined courses of four languages:

- i. Mother tongue or Regional language and Sanskrit;
- ii. English; and
- iii. Hindi and Sanskrit or Modern Indian Language and Sanskrit.

It has been stressed that Sanskrit should be learnt for at least five years and there should be a separate qualifying level for each of the composite languages. Critics opined that if the recommendations of the Sanskrit Education Commission, 1956, had been implemented by the implementers in sense, Sanskrit would have not to struggle for its presence in the land of its origin.

### **National Education Policy, 1964–66**

The three-language formula is a strategy that was formulated at the Chief Ministers' Conference in 1961 and that was forwarded by the 1968 National Policy Resolution and the National Policy of Education 1986. The Kothari Commission had recommended modified teaching and learning in the foundation subjects of Three Language Formula in its report in which the classical languages were disregarded. Its outlook was rigid towards classical languages, though there was a possibility to include it in the Hindi speaking areas, in lieu of the Modern Indian Language: *'Considering the special importance of Sanskrit to the growth and development of Indian languages and its unique contribution to the cultural unity of the country, facilities for its teaching at the school and university stages should be offered on a more liberal scale. Development of new methods of teaching the language should be encouraged, and the possibility explored of including the study of Sanskrit in those courses (such as modern Indian languages, ancient Indian history, Indology and Indian philosophy) at the first and second degree stages, where such knowledge is applicable'*. The commission stressed the significance of the classical languages, especially Sanskrit, in its report in Para 8.54 in Chapter and but excluded it from the Three Language Formula.

### **National Policy on Education, 1986**

The National Policy on Education 1986 underlined the importance of Sanskrit and emphasised the importance of 'Sanskrit' in the national system of education as it is still inextricably linked with the life, rituals, ceremonies and festivals of the vast Indian masses. The language scheme of 1986 Education Policy was:

Scheme 1: Hindi, English, and Modern Indian Language (for Hindi speaking areas)

Scheme 2: Modern Indian Language/Regional languages, English, and Hindi

But, in 3(d), the education policy accepted the importance of the classical languages in the scheme. However, in 3 (e), the policy avoided the inclusion of classical languages in the scheme that represented its casual approach to classical languages. As a result of which, the exit of Sanskrit from the Indian school curriculum became faster.

### **Programme of Action, 1992**

The Programme of Action, 1992, stated that though Sanskrit should not be introduced as an independent subject under the ‘Three Language Formula’, it may be introduced as part of a composite course in Hindi and the regional languages as the mother tongue at a suitable point in the primary or upper stage. It is to be planned in such a way that the study of Sanskrit may not be ignored. At the secondary stage, Sanskrit may be offered as an additional option and at the higher secondary stage, suitable elective courses in Sanskrit may be made available to those students who wish to study it. Open school courses for Sanskrit may also be designed for learners at all levels. A major shift in designing Sanskrit courses and transacting curriculum in the subject is that the language is to be treated not as a ‘classical language’, but as a ‘living language’ that is still relevant in Indian settings.

The Indian Council for Hindi and Sanskrit Education is an autonomous body that was established for the development of school education under the guidelines of the National Education Policy–1986, and Programme of Action, 1992. It runs secondary and senior secondary level courses on the pattern of CBSE/NCERT and follows the National Curriculum Framework for students from deprived sections of people. In addition, the Council also offers Diplomas in Hindi and Sanskrit language courses.

In the subsequent policies of education in India, i.e., the National Curriculum Framework, for school education (2000), the principle of three-language formula is followed. The Central Board of Secondary Education has made Sanskrit a third language in the schools under CBSE, though it remains as an option for a school to adopt it or not; the other choice being the state's own official language. In such schools, learning Sanskrit remains an option for grades 5 to 8. However, the ground realities in the field of language education are far from conforming with the spirit of this. Ignoring the mother tongue as first language and practice of making English the medium of instruction right from the play school stage has reached even to the remote villages, which has resulted in the gradual destruction of Indian culture.

### **SUPREME COURT INTERVENTION 1994 PRONOUNCING SANSKRIT AS PART OF THE CURRICULUM**

Though Sanskrit as a language is included in the Eighth Schedule of the Constitution, in universities, Sanskrit department is not part of the Modern Indian Language. In 1994, the Supreme Court of India declared Sanskrit to be part of school, college and university education. It validated the teaching of Sanskrit as an MIL. However, Sanskrit learning was affected by the non-availability of teachers and funds.

### **Report of India's Vision and Roadmap for Development of Sanskrit**

A thirteen-member Sanskrit Commission headed by Satyabrata Shastri was constituted for broader promotion of classical languages by the UPA Government. Hereafter, the Ministry of Human Resource Development (Present Ministry of Education) of India constituted a committee to suggest a long term vision and roadmap for the development of Sanskrit for the next ten years. The Committee was framed under the Chairmanship of Prof N Gopalswami, Chancellor, Rastriya Sanskrit Vidyapeeth, Tirupati, on November 18, 2015

to assess and review the present schemes, and suggest ways and means to bring qualitative changes in Sanskrit education both at the secondary and higher education levels. The Committee in its vision and action plan report suggests measures to integrate Sanskrit studies with different disciplines of science and laws along with methods and pedagogies of teaching Sanskrit. Taking stock of the present education scenario vis-à-vis Sanskrit, the Committee gives practical suggestions on preservation, propagation and sustenance of Veda Vidya; promotion of school education; higher education; Ashtaadashi Scheme; and teacher training, etc. Some of the suggestions include – revival of old Sanskrit schools and Veda Pathshalas. Sanskrit may be offered through the three-language formula in school education in all groups of higher secondary arts, science, and commerce, Teaching Sanskrit through Sanskrit, Central Board of Secondary Education (CBSE), Indian Certificate of Secondary Education (ICSE), National Institute of Open Schooling (NIOS), Kendriya Vidyalaya Sangathan (KVS), and Navodaya Vidyalaya Samiti (NVS) may be asked to implement three languages till the last year of secondary education, Sanskrit methodology in BEd and DEd, Inclusion of Indian knowledge, more Sanskrit universities and Research Centres, constitution of CBSE like board for affiliation of Sanskrit medium schools, revision of Sanskrit textbooks by NCERT.

## NATIONAL EDUCATION POLICY, 2020

The National Education Policy–2020 attempts to fix the previous limitations. The Policy recommends integration of teaching and learning of Indian languages in schools as well as at every level of higher education. The policy document promotes Sanskrit as an ‘important, enriching option’ for students in school and higher education, including the proposed three language formula’. The New Education Policy makes it mandatory to learn a native Indian language till class 5. It gives the freedom to the state, region and child to choose three languages to be learned, where at least two of the three languages should be native Indian languages, providing the opportunity to know our culture and acquire communicative skill set needed. The Policy retains three language formulas that were to

be implemented from grade 3 to grade 12 instead of the previous system where it was implemented from grade 3 to grade 8. It also recommends the hiring of teachers to implementing three language formulas.

## EMPHASIS ON SANSKRIT IN NEP–2020

### Multilingual Education and Power of Language

The National Education Policy–2020 stresses the multilingualism (4.11) as a force for national integration and suggests the introduction of Sanskrit at the foundation stage—from primary to the university level. Teaching and learning of Indian languages are suggested to be integrated with school and higher education at every level; however, it also suggests that no language will be imposed on any student.

### Promotion of Indian Languages

Under the '*Ek Bharat Shrestha Bharat*' initiative, (4.16), students will have to be offered opportunity to learn the unity of most of the major Indian languages, starting with the common phonetic and scientifically arranged alphabets and scripts, their origins and sources of vocabulary from Sanskrit and other classical languages. Schools and colleges must be providing a steady stream of high quality learning in order to keep the languages relevant and vibrant.

### Sanskrit in the Mainstream Curriculum

Sanskrit is recommended to be integrated into the mainstream curriculum rather than being restricted to single stream Sanskrit Pathshalas and universities. The language will be provided to higher education in innovative and interesting ways along with other subjects such as Mathematics, philosophy, astronomy, linguistic, yoga, dramatics, etc.

The New Education Policy states, “Sanskrit, while also an important modern Indian language mentioned in the Eighth Schedule of the

Constitution of India, possesses a classical literature that is greater in volume than that of Latin and Greek put together, containing a vast treasure of mathematics, philosophy, grammar, music, politics, medicine, architecture, metallurgy, drama, poetry, storytelling, and more known as ‘Sanskrit Knowledge System’ written by people of varied religions as well as non-religious people over thousands of years. It will be taught in interesting, experiential and relevant ways”. Sanskrit will thus be offered at all levels of school and higher education as an important, enriching option for students, including as an option in the three-language formula (4.17). It will be taught in ways that are interesting and experiential as well as contemporarily relevant, including through the use of Sanskrit Knowledge System, and in particular through phonetics and pronunciation. Sanskrit textbooks at the foundational and middle school levels have to be written in Simple Standard Sanskrit to teach Sanskrit through Sanskrit which makes studying the language enjoyable. In addition to Sanskrit, other classical languages and literature of India, including Tamil, Telugu, Kannada, Malayam, Odia, Pali, and Prakrit will also be made available for studying in schools as options for students, through online modules and in experiential and innovative ways.

The Committee also opined that Sanskrit (and Prakrit) has played a great role in the Indian tradition of the quest for knowledge, including the study of the 64 *kalas* or liberal arts and hence suggested the study of Sanskrit and knowledge of its extensive literature.

The Policy also stated, “Considering the special importance of Sanskrit to the growth and development of Indian languages, and its unique contribution to knowledge development as well as the cultural unity of the country, facilities for study of Sanskrit, its scientific nature, and including samplings of diverse ancient and mediaeval writings in Sanskrit from a diverse set of authors, that will be made available in schools and higher educational institutions”. Students will have the option of learning at least two years of a classical language of India and its associated literature, (4.19) through experiential and innovative pedagogies.

## Integration of Technology

Integration of technology, i.e., through games and apps, by weaving cultural aspects of the languages, such as films, storytelling, poetry, and music and by drawing connections with various relevant subjects and real life experiences, from Grades 6 to 12 with the option to continue from the middle stage through the secondary stage and beyond (4.21).

## MAKING LANGUAGE VIBRANT AND RELEVANT

### *Language Vocabularies and Dictionaries*

The policy document (4.22.6) suggests that to make language learning vibrant and relevant, there must be a steady stream of high quality learning and print materials of the languages in terms of textbooks, workbooks, videos, plays, novels, magazines, etc. Languages must also have consistent official updates to their vocabulary and dictionaries that need to be widely disseminated. The policy also allows state government to hire teachers with high levels of language proficiency and encourages consultation to prepare a language dictionary for the respective language that is to be used in education, writing, journalism, speechmaking etc. The dictionaries will be made available both in print and electronic formats.

The policy suggests that learning and teaching of Indian languages like Sanskrit needs to be integrated into school and higher education at every level. To make it relevant and vibrant, there must be a steady stream of high quality learning and print materials for these languages including textbooks, workbooks, videos, plays, poems, and other digital material.

### *Sanskrit Universities to be Multidisciplinary Universities*

It is decided that Sanskrit Universities will move towards becoming large multidisciplinary institutions of higher learning, including other major subjects in their education system and so that other universities can also include Sanskrit.



Programmes on all classical languages including Sanskrit language and literature will have to be offered in universities and institutes with an effort to collect, preserve, translate and study thousands of manuscripts. Sanskrit and other Indian language institutes and departments across the country are to be strengthened, and classical language institutes are to be merged with universities.

### ***Four-Year B.Ed Programmes***

Strong departments and programmes in Indian Languages, Comparative Literature, Creative Writing, Art, Music, Philosophy have to be developed across the country, and degrees including the 4-year BEd dual degrees will be developed in these subjects. The programme will emphasise on producing high quality teachers with expertise in language teaching and Music, Arts, Philosophy and Writing.

### ***Establishing Indian Institute of Translation and Interpretation (IITI)***

The New Education Policy proposes setting up of Indian Institute of Translation and Interpretation (IITI) while laying significant emphasis on Sanskrit and other Indian languages. It will include an extensive use of technology to aid in language translation and interpretation efforts. It is hoped that such initiatives will be backed with the required funds.

### ***Online Portals, Web and Wiki***

The Policy recommends showcasing the languages of India along with its art and culture through online portals, the web and wikis to preserve the knowledge of native languages and their knowledge in the form of dictionaries, videos, recordings, and reciting poetry, telling stories, performing folk songs, plays, dance and other learning resources of knowledgeable persons/experts in each of these fields. Such web portals are to be managed by the research teams of universities and funded by the National Research Fund.

### *Scholarships and Incentives*

The Policy also recommends various awards and incentives to outstanding performers in Indian languages and literature. Proficiency in a language will also be considered as a major quality parameter for employment.

The recommendations of NEP–2020 will surely bring new zest and vigour to Sanskrit learning. However, emphasis on Sanskrit learning in the policy also faces criticism, calling it discriminatory to Schedule 8 and other languages of India and its attempt to provide single identity to the people of a country of diverse language and culture. The language policy of NEP–2020 is also criticised on the grounds that education up to class 5, preferably until class 8, is to be imparted in mother tongues of students. Classical languages like Sanskrit have been proposed at all levels, while instruction in foreign languages are suggested to be offered from the secondary level: “It is observed that when new subjects like Computers, Environmental Science, Agriculture, and skills are introduced at the secondary level in various states, usually those subjects are offered as an option to Sanskrit and not to any other subject, and thus Sanskrit becomes a scapegoat,” the report stated. It suggests integrating the study of ancient classical language with other disciplines such as Mathematics, Physics, Chemistry, Medical Science, Law, and teaching Sanskrit through modern tools.

## CONCLUSION

India was once known as *Vishwaguru*, because of its world-class centres of learning like Takshashila, Pushpagiri, Nalanda and others. India has contributed to the world not only in Philosophy and Spirituality, but in Science, Mathematics, Astronomy, and other areas as well. Following foreign invasions and the colonial rule, India lost its pre-eminent position, having not a single university in global top ranking. Therefore, it is crucial to focus on and explore our own knowledge system and enhance it with further knowledge generation and innovation. For that, our education system as well as policies must remain rooted in our culture and heritage. Though,

the inclusion of Sanskrit as a compulsory subject may seem a bit radical, the need to restore and popularise Sanskrit at this time is essential and could be beneficial for generations to come.

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