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National Education Policy—2020: Renewed Role for Higher Educational Institutions in Bharat#

R P Raya*

At this moment in History, we would have approached a significant milestone in the journey of National Education Policy–2020. July 29, 2021 marks the first anniversary since Union Cabinet gave its approval for the launch of NEP–2020. The Government of India's approval of the National Education Policy–2020 in the month of July 2020 in the midst of an unprecedented pandemic is a statement unto itself on the demonstrable commitment of the Polity to embrace transformation that is contextually necessary and meaningful to the society.

The NEP–2020 is a culmination of efforts of a number of Ministers at the helm of the Union and State/UT Governments like Education, Women and Child Development, Youth & Sports, Ministry of Culture, as well as aided by NITI Aayog. In addition to this, the Officials, Members of the Drafting Committee and sub-committees of NEP–2020 and other experts have put in yeoman service into this vision-setting exercise. This exercise focused on (according to the author of this paper) outcomes while taking care to attend to global best practices, future trends, nuances of grassroots emotions, amplifying the spirit of Bharat and *Bharatiyata.* In a nutshell, *Bharatiyata* is, doing anything with "*trikarana shuddhi (holistic harmony among Thought – Word - Action [TWA]) towards attaining happiness for oneself and all around*".

The Context Setting and Making of the NEP 2020

There has been a continuing discussion around India and *Bharat* - the perception of divergence that exists between the both. There is nothing left to ambiguity as the "vision" on the page # 6 of the Policy document states, "The Vision of this Policy -- This National Education Policy 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". Theconcept/ reality of global citizenship is substantially given a face-lift and validated in the vision of the policy. In fact, the vision sets out clearly the route to global citizenship – "The vision of the Policy is to instill among the learners a deep-rooted pride in being Indian, not only in thought, but also in spirit, intellect, and deeds, as well as to develop knowledge, skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen".

#The article is published to commemorate the Ist anniversary of the launch of NEP–2020.

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The National Education Policy is driven by the big idea of empowering students while prioritizing accountability, provides for the autonomy and is encouraging agility in the functioning of the institutions. The focus on teachers, our own languages, according importance to imparting value-education are examples of how the policy seeks to usher in the spirit of *Bharat,* i.e., *Bharatiyata.*

The policy document is exhaustive and covers a number of areas that directly and indirectly impact the education sector. The context-setting for such an overarching policy is no ordinary task, neither are identifying and implementing solutions for the variety of "concerns" the sector has had the legacy of enduring.

While we look at what is done at the policy formulation stage vis-à-vis the NEP–2020, we must also consider, "what is the cost of not doing "a specific policy driven imperative" at this stage of an aspirational Indian Society?" After all, any policy will impact us as individuals, today or tomorrow. The policy - induced efficiency and transformation potential must be complemented with a fit governance and management system at the Institution level. Because, it is these systems that enable and guide our higher educational institutions to succeed in an opportunity-full, complex and competitive world of tomorrow. So, to that extent, NEP 2020 envisions a re-imagined nodal structure for efficient and easy Governance, Administration, Monitoring and Management - both at government and institution levels.

As we move on to implementing the policy, various States and Universities would have to adopt an approach that ensures that the : (1) success of the sub-systems and individual entities under their purview are maximized, and (2) the hurdles to fostering excellence and causes of abject failures of the system are forthwith prioritized for nullifying.

In adopting these two (above stated) approach-maxims, the various States/Union Territories and Higher Educational Institutions will set forth systems that demonstrates their commitment towards empowering the vast segment of our populace, especially those dis-enfranchised and distanced from economic, social and skill/educational empowerment thus far. For instance - the mid-day meals policy can be traced back to as early as 1920s with it recalibrated many times across the timeline in 1950s to 1980s to 1990s and early 2000s. Perhaps, if we go in search of such policy measures undertaken in our civilizational and classical history, may be there will be instances to cite. We have had our share of good governance policies like mid-day meals scheme/ policy that were impactful at the grassroots, albeit to varying extent across the country/timeline. It is very much in our polity's realm to formulate inclusive and impactful policies towards assuring a sense of empowerment among our citizenry, no doubt often having to make-do and therefore with varying extent of success in reach and quality. The overarching priority to fulfil the aspirations and ensure upward mobility of our citizenry has historically been a driving force behind many of our policies.

NEP–2020, in that sense, is also driven by similar goals. NEP–2020 serves as a promise. It is critical now to make this promise, a possibility, into reality at grassroots. Here comes in the policy implementation end to take steps (and this will be a continuous process) on a war-footing, that will define the extent of success in making this promise and possibility a reality.

This article is an attempt to review the policy from a prism of imperatives to us as members of the broader education fraternity – educators, administration and leaders.

Focus on the Teaching Community – Imperatives for the Fraternity

The NEP–2020 has teachers as the center of many vision setting utterances that deserve much attention. It comprehensively covers, among others, aspects like filling up of vacancies, merit led assessment, guarantee of tenure, remuneration, and promotion. The Policy is forthright in so far as actively seeking to bring much deserved respect, dignity, character to the noble profession of teaching while acknowledging the role of teachers in nation-building. In the very introduction part, on Page 4 of the policy document, there is a statement of conviction that states: "The new education policy must help re-establish teachers, at all levels, as the most respected and essential members of our society, because they truly shape our next generation of citizens. It must do everything to empower teachers and help them to do their job as effectively as possible. The new education policy must help recruit the very best and brightest to enter the teaching profession at all levels, by ensuring livelihood, respect, dignity, and autonomy, while also instilling in the system basic methods of quality control and accountability."

As a member of the teaching fraternity, I have no doubt in stating that current generation of teachers in the near - and medium-term future have ever greater need to be ever more active in finding ways to engage in imparting learnability, character, confidence and resilience among students. As generational shift is under way at our institutions even among the teaching community, it is sure that our next generation faculty would measure up to command much respect from our future generation of students. The contextual realities of teaching and learning processes have and are being whole somely shifted. And the forthcoming technological disruptions would only accentuate and amplify this ongoing shift. The sooner we realize and acknowledge this reality, the better prepared we would keep ourselves for the future. If the rate of change in terms of high-speed connectivity and such others is any indicator to go by, these shifts would keep occurring all the more often and in a much more impactful manner.

Individually as members of the teaching fraternity, members of the management, administration and leadership of the institutions and collectively as members of the higher education sector – we must engage and evolve a future-proof structural and operational framework. The National Education Policy–2020 has conceived required governance-oriented instrumentalities that are facilitative and enabling in nature. The autonomy granted to the individual institutions need to review our recruitment, hiring and advancement policies to ensure the sub-systems within the broader education landscape and our entities (namely, the schools, colleges and universities) are designed to routinely bring in resources and resource-persons who would augment the teaching capabilities and infrastructure.

In the pursuit to have proper resource persons to augment the availability of abled teachers for the ever-changing societal context, the governance and management systems of education need to appreciate, as stated in the study of motivation in Daniel Pink's book-- *'Drive: The Surprising Truth About What Motivates Us'* published by Riverhead Books in 2009, "*that people are most motivated when three conditions are met: autonomy, mastery, and purpose. Teachers who want to avoid burnout need to make strategic choices about managing change. They must have some autonomy in their choices and must be guardians of their own time to approach mastery. And if a teacher doesn't recognize or agree with the purpose behind a change, that change effort is doomed to mediocre implementation at best*".

Open Innovation Led Internalization and Externalization of Our Institutions

Whether we call it autonomy or flexibility, it is in the interest of the survival of the institution to consider a shift to 'adjunct faculties' supported by the tenured, resident educators. This augments the interaction between the teaching and learner's community within an institution as well as between the institution – academics and industry – professionals / practitioner community.

We do have some shining examples of forward-looking institutions that have already worked on such solutions and have implemented them with significant success. These require the personal commitment and confidence of the leadership at various levels to expand such best practices in a sustained, continued and efficient manner through the utilization of technology.

At a time when we are witnessing emergence of newer technologies with significant disruption potential to business and operation models, it is going to be acutely difficult, if not impossible, to have only qualified PhDs to upskill our youth. A greater proportion of learning is any ways moving to "self", "anytime", "anywhere" and "on-demand" in nature. The educational leaders and academic fraternity are better off acknowledging this reality and developing work around rather than resist the change that is any which ways here at our doorsteps. One of the leading indicators are the investments that are flowing into the Technology powered Education Technology solutions since the onset of the pandemic. In a report filed by T E Narasimhan of Business Standard published on August 6, 2020, it is quoted that *most of the EdTech companies are seeing 3-5X rise in free audiences and anywhere 50-100% growth in monthly revenues due to COVID -19. Also, it is reported that the Venture Capital (VC) investments in Edtech start-ups have almost tripled during January to July 2020 to $998 million, from $310 million, a year ago. Edtech is the most funded sector in 2020*. Towards this end, it is likely that institutions would be increasingly open to consider additional technology and platform collaborators to augment learning and skill development mandates of the institution. It is, therefore, appropriate that Ministry of Education and Skill Development are together at the highest governance level of Government of India.

The National Education Policy 2020 duly and rightly recognizes the need for education to foster

institutional learning environment blended with technology powered learning solutions – this is stated in the policy document page # 59 under the section Online and Digital Education: Ensuring Equitable Use of Technology: *"...unless online education is blended with experiential and activity-based learning, it will tend to become a screen-based education with limited focus on the social, affective and psychomotor dimensions of learning*".

Structures to Enable Growth and Influence of the Institution

There must be a greater and deeper relationship that is ongoing in nature, so as to bring the above referred capabilities and resources to augment the engagement between the higher educational institution and the students. Given the large number of students, demographically speaking, expected to pass through the education sector in the coming 4 decades or so, there is now a need for a new foundation of sorts. The NEP–2020 is, in a manner of speaking, envisions this well-timed review and rethink to act. This new foundation would likely see a marginal enhancement in the quality of active role of Government. This would mean that there would be wider ambit of activities that the management and leadership of the institutions must undertake. This could also mean a greater role of industry going forward– through a well-founded mutually beneficial industry – institute inter activity covering syllabus, training of faculty, internships to students, placements as well as joint research and work associations. This is evident in the fundamental principles laid down at the very outset in the policy document in page # 5 where it is stated, "*substantial investment in a strong, vibrant public education system as well as the encouragement and facilitation of true philanthropic private and community participation."* It is a relief that the policy has taken into its active consideration and acknowledges the various hurdles and bottlenecks faced by the sector. On the page # 33 of the policy document, it is mentioned: "*Some of the major problems currently faced by the higher education system in India include:*

(a) a severely fragmented higher educational ecosystem;

(b) less emphasis on the development of cognitive skills and learning outcomes;

(c) a rigid separation of disciplines, with early specialization and streaming of students into narrow areas of study;

(d) limited access particularly in socio-economically disadvantaged areas, with few HEIs that teach in local languages

(e) limited teacher and institutional autonomy;

(f) inadequate mechanisms for merit-based career management and progression of faculty and institutional leaders;

(g) lesser emphasis on research at most universities and colleges, and lack of competitive peer reviewed research funding across disciplines;

(h) suboptimal governance and leadership of HEIs;

(i) an ineffective regulatory system; and

(j) large affiliating universities resulting in low standards of undergraduate education."

Among the solutions to overcome the above cited problems, the policy document on the very next page # 34, posits among others, this as a solution which recognizes the openness to synergistic role of private/philanthropic institutions in stating that, "*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."*

Role of the Institution vis-à-vis the Society

The policy has induced a certain degree of dynamism potential that the higher educational institutions can use to their benefit. There must now be a conscious and serious consideration of the role of the institution vis-à-vis the society. An institution can contribute to society in a variety of ways. In fact, this is not something new. We do have a record of such value adding activity that accrues benefit to the society. But it now requires a more serious focus and consistency. This must be embedded to a greater degree into the popular mainstream psyche of the institution's stakeholders.

A likely question for a higher educational institution to ask itself would be, "what is the additional and augmented value of our institution to the immediate neighborhood, region and nation?". Be it a teaching intensive institution or a research-intensive institution, a large multi-disciplinary university or a stand-alone college, there are multiple ways that our higher educational institutions could raise their

stature through enhanced value addition and thereby extend their influence. This may in fact pave way to develop means to exchange value that stands to the benefit of the institution as well as stakeholders. Many initiatives towards this end are commonly observed across institutions in some form or the other. But, as a consequence of this NEP–2020, the institutions get to embed this aspect into their activity frame so as to mainstream it within the institutional systems and stakeholders. This aspect is outlined in the policy document page # 37, under 11.8, as follows, "*as part of a holistic education, students at all HEIs will be provided with opportunities for internships with local industry, businesses, artists, crafts persons, etc., as well as research internships with faculty and researchers at their own or other HEIs/research institutions, so that students may actively engage with the practical side of their learning and, as a by-product, further improve their employability*." This may not only help students but there is a potential for the higher educational institution to serve as a hub for development of local MSMEs, Solopreneurs and Startups.

Agility Comes of Age…Complexity for Institutions

The policy seeks to infuse agility, de-bureaucratization, and de-silo. The NEP–2020 acknowledged that, "The implementation of previous policies on education had focused mainly on issues of access and equity, with a lesser emphasis on quality of education [0.11, Page 5 of NEP–2020]. We have had a fairly structured approach to education. There is an expressed encouragement to now adopt a renewed outlook so as to enhance the chances of access to quality education leading to students' success and satisfaction of their innate urge to learn. The time for such an idea is truly here and now. Therefore, one of the notable firsts that this National Education Policy 2020 sets forth is the opening up of movement of students – easy credit transferability options - within the institution and among institutions for specific courses / and acquire a set of credits. One another area is the multiple entry – exit - re-enter option to be made available to students to enter and leave campus with some credentials and return to continue education later. At each exit, the Institution gives to students an "acknowledgement of having acquired specific skills" through the issuance of diploma, certificate and ultimately a degree. The exit / re-enter options enabled here in this policy would add enormous opportunities to the institution as well as pose challenges.

The job markets are increasingly likely to redesign their "rudimentary eligibility criteria" for graduate hiring in reference to the specificity of "degree", "institutions", etc. Employer Organizations are beginning to demonstrate openness to engage and employ a youth if she/he demonstrates learnability, application of their learnings, etc., even if the candidate holds a nanodegree and certifications in the required work-stream / work-area. Therefore, for those at the helm of the governance and management layer inour higher educational institution, it is Utmost Critical to develop capabilities to *engage students* such that they truly feel they would gain from the investment of their time, money, focus and efforts in the classrooms.

These would more or less demand institutional processes to get agile. At the institution level, this will add to administrative activity as well as demand active leadership deliberation. There is, however, no doubt that the 'policy induced structural changes' are necessary and would go a long way to future-proof our system. Furthermore, these will enable the students the opportunity to gain valuable applied learning experience. The institutions have to re-formulate their policy and functional frameworks, operational systems and procedures have to accommodate the priority of the NEP–2020 --- this is an exercise of much significance for institutions.

Thus Far and Road Ahead

Since our Independence, our educational institutional management structures and systems have taken on their stride the significant shifts so far. Access to Education and Quality Education are a strategic national priority and we have witnessed a trajectory that has by and large covered the country, not uniformly – in some places, access to education has been historically abysmal while in some places, new centers have been founded and are enhancing their scope, coverage and impact. In certain places of the nation, we have seen setting up of institutions at a much faster pace in the past 5-6 years.

The popular consciousness of the nation today recognizes and acknowledges the good, great and glorious past wherein we served as pioneering hubs of education, intellectual curiosity, excellence orientation and knowledge of spiritualism. The inter activity powered by the technology has led us to fostering this awareness far and wide across and beyond the nation. Realization of a reality about the ancient *Bharat* serving as *Viswa-Guru* has been powering the concept and mechanics of

the Policymaking, especially in the context of the National Education Policy 2020 coverage under the subject of Internationalization–policy document page # 39 wherein it is stated that, "*India will be promoted as a global study destination providing premium education at affordable costs thereby helping to restore its role as a Vishwa Guru*".

As a modern developing democracy with a civilizational continuity, rearing to leap ahead led by our energetic youth, we are now transitioning from our recent past of 1960s GDP that was at 3700+ crores USD to 1990s GDP of 32,000+ crores USD to 2010 GDP of 1.34 Lakh Crores USD to 2018 GDP of 2.72 Crores USD. We have thus far, as educational institutions, by and large "told' our students what they need to study / learn. Individually speaking, we have covered a long distance and have a much longer distance ahead to cover in terms of development and excellence. We are now at a Per Capita GDP of USD 2000+ and our next milestone maybe the USD 5000+ in Per-Capita GDP terms, by around 2030 and then onward from there to 2040 and 2050 and so on. This is just for the setting the context. Those who are now students, scholars and teachers in our institutions would have to largely play their part and contribute to the growth and value creation of such proportions. And the time and stage like we have now in India is perfectly apt to be in the educational space. For a nation with the potential growth trajectory like that of India, educational sector must and will actively have a role to play.

The policy sets out at the outset that on page 5 of the NEP–2020 Policy Document that, "f*lexibility, so that learners have the ability to choose their learning trajectories and programmes, and thereby choose their own paths in life according to their talents and interests".* Therefore, it is time our educational institutions and all its key stakeholders recognize that we now move on ahead from not just "telling" our students what they need to learn, but also be there and be counted as an institution that "offers" what a student aspires to learn/develop. This requires as much a mindset change as also infrastructure, resources and scalable operational architecture and tools.

Role of Educational Strategists, Visionary Leadership and Institution Builders

It is here that strategists and visionary leadership of our polity, institutions as well as industry have to integrate thereby creating a development-propelling vehicle that is sustainable and successful in generating the impact for our nation as well as our neighborhood and rest of the world. We have a well-documented history of our very own passionate and pioneering educational institution builders who have come to augment the public system in the educational sector. There are very many experienced, competent and conscious leaders both in the public education system as well as in the private education space who have demonstrated their willingness and capability to measure up to the objective especially when it counts.

An adept and agile *governance and management system in our higher educational institutions* will be well placed to cater to "creation and organization of potential". This is important because only then will it be possible to usher in the desired progress and prosperity and an aspirational society that is capable of actualizing its current potential and further develop its new potential.

Conclusion

The NEP–2020 provides a framework to realize our potential; this framework has the capability to encapsulate the best practices including those from the past experiences both value-added and non-value added procedures and practices as also from the heritage oriented "Bharatiya" traits such as accountability, responsibility, compassion, and integrity. Not just that, we are openly embracing suitable systemic practices and approaches from the contemporary global society and readapting the educational institutional leadership and management models best suited for our institutions and their stakeholders.

The success of governance and management of higher educational institutions is demonstrated in the success of its faculty members & their families, students & their parents, alumni, industry, collaborating organizations & individuals and the Nation. The NEP–2020's vision becomes the reality with the needed changes offered in a calibrated manner in the regulatory and legal, structural (including academic), and management domains. A reflection has been offered into the ways and means the individual institutional level implications are to be taken on board as we adapt to emerging governance and management system that the policy envisages.

Disclaimer:

The views, thoughts, and opinions expressed in this article belong solely to the author, and not necessarily to the author's organization ❑

Dynamics of Quantity vs Quality in Higher Education

Mariamma A Varghese*

India has one of the largest Higher Education system in the world. It witnessed rapid expansion in the post-independence era, in terms of the number of students, staff, colleges and universities. Higher education itself has expanded tremendously from 19 universities in 1947 to 347 in 2005, 682 Universities in the year 2012 and similar type of expansion in the number of colleges from 27 to 16,500 and over 38,000 in the year 2012.(UGC Annual Report 2012). In 2017, there were over 864 universities, 40,026 colleges and 11,669 stand-alone institutions (AISHE, 2017). There are 313 (36.22%) universities privately managed and 15 are exclusively for women. There are 40,026 Colleges, managed by 278 affiliating universities, 59.34% located in rural areas. 9.30% are exclusively for girls; 77.8% Colleges are privately managed; 64.2% Private-unaided and 13.6% Private-aided. Andhra Pradesh and Telangana have more than 81% Private-unaided colleges, followed by Tamil Nadu (75.8%). Bihar has 13.1% Private-unaided colleges and Assam has only 10.8%; Bangalore district tops the list in terms of number of colleges with 1025 institutions. Top 50 districts have about 33.5% of colleges; only 2.6% Colleges run Ph.D. program and 36.7% postgraduate programs. Significant number of programs are being added even during the current plan period.

Present Status

According to the Recent AISHE Report (2020) there are 993 Universities, 39931 colleges and 10725 standalone institutions, out of which there are 385 private universities, 394 Universities located in rural areas, 16 Women's universities, 1 central open University,14 State open Universities. There are 110 Dual mode Universities 548 General Universities, 142 Technical, 63 Agricultural and allied, 58 Medical, 232 Law, 13 Sanskrit and 9 language Universities. The top 8 states in terms of highest number of colleges in India are Uttar Pradesh, Maharashtra, Karnataka, Rajasthan, Haryana, Tamil Nadu, Gujarat and Madhya Pradesh.

The expansion in terms of infrastructure and manpower is reflected in the quantum of financial allocation from 55 to 78,000 crores during the period from 1947 to 2001. This significant increase in the quantum of allocation is surpassed by the rapid growth in population, phenomenal increase in number of students including the new entrants to higher education from all sections of the population. Looking at the expenditure on education as proportion of GNP shows that over the years, it has increased remarkably from 1.2% in 1950-51 to 3.9% in 1998-99. In 2012, 2% of the GDP was allocated for higher education. The increase in percentage allocation in GDP for Higher Education has only gone up by 0.4% in 2018 as compared to the previous year.

Public spending on higher education was 1.33% of India's GDP in FY12.It has been almost flat over the last five years. Almost 95% of the higher education institutions are under the purview of the states, but it is the central government institutions that get the bulk of the funding. UGC grants are skewed towards Central universities which account for 2.6% of the enrollment. Central Universities get 76.8% of the total grant for50 institutions, while the State Universities (409) get 17.6%, Deemed Universities (125) get 2.4% and the others-Autonomous colleges and other categories (708) get 3.2%.

This however does not meet the requirements of the education system as a whole to provide reasonable levels of quality education to all the students. It is far below the allocation rate of developed countries and less than most of the other developing countries. According to the HDR (2013), India ranks 131st on the basis of Human Development Index (0.624) among the 188 countries, Norway ranks first with the HDI of 943. In 2017-18, India has climbed up one step to reach 130th rank on the Human Development Index (0.640).

Today, we cater to only less than 25.2% of the eligible students in the age group of 17-23 years. The developed nations cater to nearly 50% of the eligible age group. India certainly needs a higher proportion of allocation to meet the gigantic needs of the country's education sector.

The overall scenario of Higher Education in India does not match with the global quality standards. Hence, there is enough justification for the assessment of the Quality of the country's educational institutions. Traditionally, these institutions assumed

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that Quality could be determined by their internal resources, human as well as material resources and the modern campus and buildings and its outputs in terms of employable graduates all comprehensively follow the *value added approach* which does not measure the competencies students develop through the courses offered.

Higher education is perceived as an important factor of investment in human capital investment. Higher education institutions are responsible for the formation of human capital through creating knowledge base, research and knowledge development and dissemination and use of knowledge by interacting with the consumers of knowledge. Higher education is becoming increasingly competitive in terms of the number of students enrolled, qualified staff and other resources. Because of the increasing demand for access to higher education by the masses, it has shifted from being the service of the elite to a service open to the masses. However, the declining government funds to public institutions and the rising private institutions as a response to the increasing demand for higher education has caused the decline in the quality of input which ultimately result in the quality of education.

The most important challenge is not just to guarantee the expansion of education, but also to improve the quality, and link education to the society's needs and developmental goals. It is necessary that the road map of the future of the higher education scenario be chartered clearly to facilitate the transition of India into a developed nation and build it as the strongest nation in the Asian continent, over the next 50 years.

The present state of education in our country is at a low ebb except for some pockets of excellence. This is evident from the applications received by many higher education institutions for the post of teachers at various levels. While interviewing the candidates, one can diagnose the quality of graduates. In fact, these graduates are among the 50% of the eligible candidates from Class 12 who enter the portals of Higher education. The drop out ratio among the Schedule castes, Schedule Tribes and other Backward Castes is in alarming proportions.

According to the Effective Education for Employment (EEE) study by Ed Excel and others, there is notable mismatch between what is being taught in Universities and Colleges, and the skills and behaviors that our businesses and organizations are looking for in their new recruits. The studies revealed that many employers feel that the present-day education has failed to effectively prepare individuals for the workplace. Even students felt that their education lacked relevance to the jobs they were desirous of applying for. On one hand, we do not have enough employable graduates and on the other, we have many positions to be filled in.

Earlier, studies when limited number of institutions were covered for Assessment and Accreditation by NAAC (2006), with a small sample of 140 universities, the findings indicated that majority of them across the country were of either middle or poor quality. Among the colleges only 10% were of good quality, 66% were average and 24% were of poor quality. According to the Accreditation records of October 2013, the number of colleges accredited through the first cycle is 5,224, the second cycle-1,327 and third cycle 55 and for the Universities, the number of first time accredited are 179, accredited through the second cycle are 75 and the third cycle are only three. The grade break ups showed that 11% colleges have A grade, 71% B grade and 18% C grade. For the Universities, 39% are in the A category, 58% in B and 3% in the C grade.

On almost all indicators, from faculty standards to library facilities, from computer availability to student-teacher ratio, higher education institutions suffer from huge deficits. Although India's economy and its job markets are booming, the education system which has been struggling for years has hit a full-fledged crisis. Right now, only 10% of its eligible student population gets the opportunities for higher education. Another big problem facing the system is the crushing faculty shortage. Already 25% of teaching positions nation-wide are vacant. Fifty seven percent of teachers lack either a Master's or a PhD degree, according to the HRD report (2017-18). Among the many challenges of higher education are:-

- Increasing drop-out rates
- Low student engagement
- Limited access to quality education
- Graduates not employable
- Lack of productivity
- Inadequate funding for research.
- Absence of institutional rating and benchmarking
- Lack of technology support systems
- High risk/expensive errors in technology implementation

When only 12% of college-age students in India pursue higher education ,the average for the OECD countries, it is 56.For the United States, the figure is 63%.There is phenomenal differences among the different nations

Quality Deficits: What is our Quality Status?

We need to diagnose the quality gaps existing in our higher education system. The deterioration of quality in many of our higher education institutions prompted the University Grants Commission to set up an autonomous body-National Assessment & Accreditation Councilin 1994,as its quality arm, to assess and accredit higher education institutions in the country. It has an added role to facilitate enhancement of quality in teaching and research . It is expected to stimulate the academic environment for the attainment of an institution's academic objectives and increase productivity. Further, in the process of assessment, institutions are encouraged to internally examine their functioning, evaluate themselves and promote accountability in higher education, especially in the general education sector.

Till 2005, NAAC had accredited over 2,606 institutions including 122 Universities and University level institutions. Even during the next 5 years thereafter, the number had not increased substantially because an equal number had lost the validity of the accreditation status during these 5 years. Although the number of institutions accredited increased to over 4,000 in 2010, the validity of over 50% had been lost during the same time. Many had not volunteered for re-accreditation. The responses from different States have been different probably due to the lack of interest by the institutions and the respective State governments.

The spread of the accredited institutions spans over a wide range of geographical territories indicating among other things the variation in response levels to the need for quality assurance. A good deal of effort at all levels becomes necessary to motivate institutions to volunteer for assessment and accreditation. There was a gradual shift from apprehension through acceptance to appreciation of the 'assessment and accreditation' process over the last decade.

The years of existence of NAAC from 1994-1997 was a phase of apprehension, Phase II from 1998-2001 showed some successful efforts indicating 'acceptance' of accreditation by Institutions. The next phase from 2003 onwards shows a quantum jump in the response level from all over the country. This is the phase of 'acceleration'. The credit for the effort that caused the positive change may be due to the State government initiatives, UGC directives, and UGC support to institutions towards expenditure on assessment and accreditation. The constant and 'all out' efforts of NAAC with its promotional activities also facilitated the institutions to apply for quality assessment and accreditation. In 2007, we observe a further increase in the number of accredited institutions. The region wise statistics of universities and colleges accredited are shown in the Table-1.

A recent study of NAAC(2019-20)of all the Accredited status of all types of Higher Education Institutions indicate the present quality status of Higher Education.

- Among the Universities, the Deemed Universities scored high for the overall score as well as for all criteria of Quality. Only in the research factor, it is still in the average zone.
- Research is the weakest point for all institutions. This is indicated from the global ranking results where research and knowledge creation play an important role.
- Central, State Universities and Institutes of National Importance had higher scores than the others in curricular aspects and Teaching Learning and Evaluation

Table-1: Institutions Accredited by NAAC (Region-wise) 2005

Universities			**Colleges**		
Region	**Number**	**%**	**Number**	**%**	**Total**
Northern	35	40.60	389	31.00	424
Southern	37	47.40	776	54.80	813
Eastern	15	30.00	142	12.50	157
Western	27	41.00	986	66.00	1,013 A
North Eastern	16	70.00	193	71.20	209
	122	**41.80**	**2,486**	**44.50**	**2,606**

- Central and State Universities and Institutions of National Importance scored higher than other types of Institutions in Infrastructural facilities and learning resources.
- Deemed Universities and Autonomous colleges scored higher than the others in Curriculum design and development and best practices. First of all, they manage all aspects of governance more effectively and efficiently. They got better funding for initiating innovative practices . Along with that, their enthusiasm and passion for quality seemed to be an influencing factor for achieving better score.

Quality Status of Autonomous and Affiliated Colleges

The Quality scores of autonomous colleges were higher than affiliated colleges. First of all, they got the autonomous status because of their merit and later they could make decisions for themselves and initiate many innovative practices for their institutions. They got additional grants because of the Autonomous status. If they remained as affiliated colleges, they would have to follow the norms of all affiliated colleges.

The average CGPA of Affiliated PG Colleges ranged from 2.17 in the east to 2.25 in North East 2.41 in North, 2.49 in West and highest in south 2.72, which is still below the high quality grade of 3 which is an A grade. Between the undergraduate and Post graduate colleges, there is an increase in the quality grade point average mainly because of the increase in the score for research

The autonomous colleges get more grants and thereby more resources, better qualified faculty and internet facilities. Above all, they are able to make decisions independently on academic and administrative matters including quality improvement and introducing innovative practices. They are able to make innovative changes in the curriculum and introduce areas for inculcating critical thinking and overall development.

The number of institutions getting accredited through the different cycles have decreased. The institutions once accredited, do not volunteer for reaccreditation even after the validity period is over.

The quality of higher education should encompass 4 components i.e. 4 E's

- Existence of infrastructure, human and learning resources.
- Extent of usage
- Effectiveness of the management process and
- Effective teaching learning process and research

The policy and the subsequent action complement each other. Both together bring about the quality in the system. There are several factors attributed to the ailing university system from the policy perspectives. The three main points which bring down the quality of higher education in the university system are:- the democratization of the governing bodies of universities, trade unionism among teachers and the administrative staff and the personnel promotion scheme.

On an average, a university carries a load of 50 colleges besides the post-graduate departments. Some universities have 300-900 affiliated colleges. According to the university Act of several universities, college Principals and Lecturers have outnumbered the university professors in the decision-making statutory bodies like the Boards of studies, Faculty Academic Councils, Management councils, Senate etc. With the representatives of the state and central governments and others, the emphasis tends to be placed on the problems of undergraduate teaching. The volume determines priority in this case. The higher level of higher education eventually is not receiving the attention it deserves.

Table-2: Quality Status of Different Universities

Type of University	CGPA	C1	C2	C3	C4	C5	C6	C7
Central	2.92	3.10	3.03	2.79	3.09	2.90	2.70	2.90
State	2.84	3.34	3.21	2.95	3.46	2.91	2.97	2.97
Deemed	3.20	3.23	3.27	2.92	3.45	3.22	3.02	3.28
Institutions of National importance	2.78	3.11	2.33	2.33	3.12	2.81	2.88	2.93
Private Universities	2.65	2.99	2.83	1.94	2.88	2.65	2.42	2.86
Mean	2.88	3.15	2.93	2.58	3.20	2.50	2.80	2.98

The importance of research and the generation of new knowledge take a back seat for the universities. In fact, universities are supposed to be repositories for generation of knowledge and the colleges are the branch organizations for disseminating the knowledge to the wider parts of the country according to their geographical jurisdiction. Often college teachers who are not conversant with the latest developments in the subjects decide the curriculum framework for the university departments and colleges. They also decide the examiners for various courses and who should examine a PhD candidate. In many universities, the chairmen of the Board of studies for various courses are elected by the members. As a result, many a times established scholars and heads of post graduate departments get left out and the system is deprived of their expertise and valuable experience. Since the Dean's position in several universities is an elected position, they may be chosen on the criteria of 'popularity' and perception rather than the 'scholarship', which is expected and required for such a chair.

'Trade unions' are the next bane. There is a tendency among the University teachers to insist on being treated on par with the government staff. Seniority is regarded as an iron rule that shall not be broken. The rapid growth in the number of lecturers while the number of senior teachers remained few, created the problem of academic frustration, which was sought to be solved through an ingenious device called the 'personal promotion scheme". The idea was to enable the promotion of a few teachers of exceptional merit who missed the bus and give them a personal chair as is the practice in western countries. But this has degenerated into an automatic promotion scheme. Sometimes Vice Chancellors are compelled to give promotion to all lecturers who have completed 8 years of service. With the passage of time, the distinction between promoted professors and professors appointed through open selection has tended to get diffused and they serve as heads of departments, deans and members of selection committees for their own universities and other universities, and even for UGC committees.

Fee structure is another policy-related issue. Universities/ colleges have little say in the matter. In some universities, the fee charged is very low. It has never changed since decades. This is particularly true for the general education stream. A student and a parent paying so little cannot demand higher quality education from that institution. It is surprising that the primary schools charge more fees than the colleges. It is high time we need to introduce a differential fee structure based on the 'means' test of the parents i.e. the family income. This approach can facilitate enhancement of access to the economically weaker sections also.

'Bureaucracy' across the layer of higher education is another bane, which prevents democratization of power in the higher education sector. Political interference adds to the existing problems. Universities should be able to function with full autonomy. Colleges need to have academic freedom and also financial freedom to offer the courses, which are relevant to their region. They should be empowered to charge fees within a 'reasonable framework' so that the necessary physical and academic infrastructure conducive to learning can be provided.

Universities need to revisit their policies regarding permanent affiliation of its colleges so that they can avail of the possible facilities and resources to support the education services. Possibly they need to develop a mechanism for monitoring the facilities and functioning of these colleges through a benchmarking exercise after giving an opportunity to perform well.

As per the seven NAAC criteria, curricular aspects, teaching, learning, evaluation, research, innovation, consultancy, extension, infrastructure and learning resources, student support and progression, governance, leadership and management and institutional values and best practices, there is significant variation among the institutions Table-3.

Curriculum Development

Quality gap is seen in the approach to curriculum development, which results in curricula which are not socially-relevant or need-based. The employability of the programs are not a consideration to many of the academic bodies. Evidence of periodic restructuring and updating of courses to match the international standards is a lacuna observed in many

Table-3: Comparison of Quality Scores of Autonomous Colleges and Affiliated Colleges

Type of Institution	CGPA	C1	C2	C3	C4	C5	C6	C7
Autonomous colleges	2.62	**2.93**	**2.76**	**1.96**	**2.83**	**2.27**	**2.72**	**2.89**
Affiliated Colleges	2.41	**2.54**	**2.70**	**1.96**	**2.66**	**1.85**	**2.74**	**2.40**

of the universities. Multi-disciplinary approach is recommended in the present NEP–2020 for higher education system.

ICT component in teaching is not seen in many institutions. Institutions offer the same prescribed syllabi without any considerations for the soft skills required for career development. Cafeteria approach is another 'missing quality aspect in curricula which would have enabled institutions to diversify and enhance the employability of graduates. Education need not necessarily be in terms of vertical growth. Other options for horizontal mobility may be thought of : -such as the establishment of community colleges where emphasis is on skill development. Preparation for various skills is required for filling the various gaps evident in the career structure of organizations.

Curricula are often outdated. Our educational system is extremely rigid and highly compartmentalized. There is no academic flexibility in curricular offerings. Lack of relevance of the curriculum is evident from the syllabus formulated without any need assessment. The curriculum has not been revised for two to three decades according to a statement issued by the Planning Commission.

Engineering and IT companies spend enormous amount of money on their new employees to update themselves and be able to cope with the new job. Lack of core competencies, rigidity in the choice of curriculum and no life skills nor soft skills to facilitate job readiness are other quality related problems.

Seventy five percent of the engineering graduates and 90% of the general education graduates are unable to find work. This crisis is not due to lack of jobs according to NASSCOM (National Association of Software & Service Companies). It is due to lack of skills. For a long time after independence, we were trying to solve the employment problem. Now we are trying to solve the employability problem. It will take more than money to solve the faculty shortage.

Unclear goals, incoherent academic focus are other quality signals which institutions should be guarded against. The curricula should fit within the national qualification framework and publication of the same should attract students from different states, regions and even foreign countries.

Teaching-learning and Evaluation

Many of the universities lag behind in facilitating experiential learning methods. Most of them follow the traditional chalk and board method, which is not a motivating method for our youth who are used to the electronic media except in some of the remote areas. Semester System, Choice Based Credit System, Continuous Assessment; Internal Assessment, Project-based Assessment etc. are not practiced in majority of the institutions.

Appointment of quality staff who can develop the personality of youngsters is imperative if higher education has to be effective. Creating an information communication network and linking all colleges and universities will create an appropriate learning environment. Many university staff do not have the capabilities in teaching and research, which is necessary for the profession. It has been found that the freeze on recruitment of teachers has affected academic development. Undue academic fragmentation of departments will also affect the academic and research quality as is observed in some universities.

Research, Consultancy and Extension

Research and Extension are important university functions. The analysis of the NAAC quality assessment reports shows that, research is the weakest link for universities and colleges both in quantity and quality. Some universities have not made efforts to monitor the quality of research in their various departments. Few have excellent monitoring system through research committees. Many a times the faculty may not have the competence for research management. Workshops and training program in this area are of paramount importance if universities aim to be the 'creators of knowledge'.

Consultancy services are not prevalent in most of the universities and colleges. Faculty generally feel that resource mobilization is a mismatch with the philosophy of higher education. They forget to realize that they are providing expert advice and knowledge to the various stakeholders besides increasing the revenue for the institution.

Extension activities undertaken by the colleges and universities, are done in a piece meal manner. Emphasis on deeper involvement of campus and allied community and an impact of the extension activity also need to be considered in planning and implementing programs.

Infrastructure and Learning Resources

Out of the institutions assessed, majority of them do not have appropriate infrastructure facilities.

With the under-equipped laboratories and ill-stocked and ill-maintained libraries, how can our universities hope to compete with the universities globally?

Infrastructure is crumbling even in top institutions like IIT's where the earlier "cutting edge laboratories" have grown obsolete. A lot of 'fly by night' colleges are proliferating. The decision by the Government to expand the country's higher education system with 72 New Institutions including 8 IIT's,7 IIM's 5 Indian Institutes for Science Education and Research and 20 IIT's will cost an enormous amount of budget allocation.

The rapid expansion could make the problem worse in terms of deteriorating quality. Immediate step to reduce the quality gap is to develop adequate facilities and also provide fair distribution of facilities as per the needs of all departments. Libraries should be adequately stocked and must have full-scale automation. Enabling steps need to be taken for effective use of library and computer resources. Networking of libraries to maximize the use is another area of concern. Necessary training should be given to all the 'users' of this facilities especially because of the technology upgradation.

Student Support and Progression

All stakeholders need to be involved for efficient student support. If the students are the focus and if they are the prime customers, all support need to be given to facilitate their learning. Effective placement and counseling center is another area where the universities and colleges need to place greater attention, since this will facilitate student support and progression.

Governance, Leadership and Management

Effective leadership system is another area of concern for many institutions. Training for leadership and team building is essential for effective management of educational institutions. *Adhoc* approach in utilizing human, financial and infrastructural resources is evident in most of the institutions. All the processes of management need to be made more systematic. Selection and appointment of teaching and non-teaching staff has to be rigorous. Further, on the job training needs to be given to promote staff development, which should be aligned with the institution's development.

In this age of globalization and privatization, with increased competition, educational initiatives need to dwell on strategic planning and decision making based on information and data. Each institution should be clear about its goals and targets and make strategic plans for short and long-term growth.

Conclusions

Institutions should innovate practices, which will continuously upgrade the quality of higher education. Failure of our higher education systems to produce sufficient number of good teachers need to be looked into seriously. Only then, universities truly become centers of knowledge production. The system should generate 'spirit of inquiry' and experimentation among its students. The ultimate result of this transformation would create a healthy, dynamic and innovative system.

The mode of funding is a vital aspect of educational reforms. Higher education system that produces thousands of unemployed graduates and postgraduates are evidently suffering from anemia of quality. While industry will surely fund disciplines that serve their profit motive, the states will have to continue to fund basic science and humanities. At the state level, efforts should induce initiatives from other quarters. Education should focus on a blend of knowledge and multiple skills. It should simultaneously be accompanied by the development of new and functional markets for such expertise and skills. Winds of globalization are blowing across the country and beginning to unleash new forces in all sectors. Sectors where higher education is lagging need intensive and express intervention for quality enhancement in the areas where quality gaps are identified. Systemic efforts in preparing the action plans and implementing the same will enable the attainment of our goals in higher education.

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COVID-19 - The 21st Century Pandemic: How Can the Universities Help?#

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COVID-19 has been pounding the world for over the past more then 2 years. The World Health Organization (WHO) announced the breakout of a Mysterious Coronavirus-Related Pneumonia in Wuhan China on 9 January, 2020. There were 59 cases till then and travel precautions were already at the forefront of experts' concerns. In just two days between 21 and 23 January, 17 people died and an additional 300 were infected. That was when the Chinese scientists confirmed that the virus was transmitted through humans. China made the unprecedented move not only to close off Wuhan and its population of 11 million, but also placed a restricted access protocol on Huanggang, 30 miles to the east, where residents were not allowed to leave without special permission. Thus, upto 18 million people were under strict lockdown. With a worldwide death toll of more than 200 and an exponential jump to more than 9800 cases, the WHO finally declared a public health emergency on 31 January, 2020 for just the sixth time. Human-to-human transmission quickly spread and could be found in the United States, Germany, Japan, Vietnam, and Taiwan. See Links for details are available at the end of the article.

It took another month of widespread infection of the virus around the globe for the WHO to declare COVID-19 a Pandemic and the date was 11 March, 2020. While declaring COVID-19 a pandemic, the Director General of WHO said in a briefing in Geneva that the agency is "deeply concerned by the alarming levels of spread and severity" of the outbreak. He also expressed concern about "the alarming levels of inaction."

The stories thereafter covering deaths, lockdowns, masking, sanitizing, social distancing, shortage of food, working from home, shutting down schools, colleges and universities for semesters and so on are well known. The governments across the world had spelt out the COVID-19 protocols to be followed by one and all. By 28 May, 2020 the COVID-19 deaths passed the 100,000 mark and by 10 June, 2020 the number of confirmed cases rose to 2 million in the US. By October 2020, the global cases crossed 40 million and the global death figure reached 1.1 million.

The experiences of the past have taught us about the nature of the disease, possible mutations of the virus resulting in spread of the virus in multiple strains and the way to control it including vaccination. It was clear that the only way out of this situation (as we learnt from other pandemic and pandemic-like situations from Spanish flu in 1918, SARS in 2008, Swine flu in 2009, and Ebola epidemics in Africa in 2015) is developing a vaccine and having people vaccinated as soon as possible. Major pharmaceutical companies of the world remained engaged in finding the vaccines for quite some time and varieties of the same are now available. Vaccines are now being administered all over the world. Yet, we all are still fighting COVID-19 as the virus keeps coming back with a vengeance as the people are failing to break the chain.

Vaccine Development in the World

In anticipation of a global pandemic, vaccines were under development for the last twenty years or more. Soon after the china outbreak in December 2019, the virus formula was identified and named as the Coronavirus SARS-CoV-2, the virus that causes COVID-19 (the '19' came as it first appeared in 2019). It infects animals and birds and is closely related to the viruses causing the earlier SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome) outbreaks. Multiple pharmaceutical enterprises had started testing more than 300 candidate vaccines in the labs and on 21st July, 2020 the vaccines from Astra Zeneca and CanSino Biologics showed promising results. By November 2020, three major vaccines that got approval for emergency use in the US and in the EU/UK are Pfizer, Moderna and Astra Zeneca. Additionally the vaccines developed and manufactured in Russia (Sputnik-V), India (Co-Vaxin, Covishield) and China (Sinovac) were administered in those countries and made available globally to some extent.

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The Scenario in India and the Preparedness

Until the end of May 2020, the death figure on account of COVID-19 in India was limited to about 5000, which peaked to 150,000 by the end of December 2020. This was much less compared to the deaths in other countries and it was thought that the pandemic situation has been overcome by India. Alas, this was only the first wave. The experts predicted that the second wave of COVID-19 could strike India in the near future and recommended not to lift the guards. Unfortunately, that did not happen and the country is facing huge challenges managing the threats to lives of its citizens.

With the onslaught of the second wave of COVID-19 India is now battling a national crisis. The country is at war with the second wave and the experts are warning us to be ready for the third wave. The consequent disruption of normal life, the economic activities in particular are threatening every citizen of this country. Although the problem is global, India needs to introspect whether it is doing enough to contain COVID-19.

Dissatisfactions arise in every sphere of life whenever the supply lags the demand and the healthcare system in India is no exception. It is, however, not possible to put a robust healthcare system in place to meet all calamities including the pandemic. A robust healthcare system could alsofail if the rate of spread of infections goes beyond control. Even the most developed countries in the world could not escape the onslaught of COVID-19. In fact, the healthcare system has so far been developing as more of a business rather than service to mankind all over the world. Medical tourism had become a buzzword in recent times and India was the destination of many from different parts of the world.

In order to combat the assault of COVID-19, India has committed all the forces at its command. The healthcare system is getting upgraded albeit slowly while the doctors, the nurses and the medical assistants are working day and night to save precious lives risking their own. The frontline soldiers also include many others like the decision makers, the law keepers, the volunteers of many non-governmental organizations (NGOs), dedicated youths forming volunteer forces in different regions of the country, philanthropic individuals and organizations, the media personnel, the crematorium assistants and most importantly those working day and night tirelessly to keep the supply chain intact in all spheres of life. The tasks ahead are to provide medical assistance to a greater number of COVID-19 patients than the healthcare system could actually accommodate, raise the recovery level as high as possible, detect infections in as many people as possible and arrest the spread of the virus and simultaneously vaccinate more and more people in record time. Although the battle looks like a marathon race, the country has to convert the same into a series of sprints.

The situation in the country is rather complex. Enforcing the COVID-19 protocols has been very difficult simply by the advisory circulars of the government, mass communication through the media and the efforts of the law keepers alone. The government has been forced to choose the option of strict lockdown as the citizens are not behaving responsibly surprisingly, irrespective of their level of education. The measure is rather harsh as the same adversely affects the livelihood of most of the people. It would, however, be possible to reduce the length of lockdown or undo it provided the people learn faster to contain the virus by following the advisory. Further, quicker pace of vaccination of all the citizens is the need of the hour.

Although the vaccination programme has commenced since early March 2021, the pace of administering the jab needs to be accelerated to defeat the rate of spread of the deadly virus. Despite initial hesitation, people are now rushing to the vaccination centers. Unfortunately many have to be turned back or made to wait longer much to their frustrations. Faster pace of vaccination demands that India manufacturesas well as imports more and more vaccinesin a time bound manner to meet all of its commitments. At the same time management strategies should be revisited not only for quicker distribution but also for augmented storage of the same across the country.

Administering the vaccine is basically a number game in view of the large population in India. The same cannot be achieved with the current level of workforce engaged in fighting COVID-19. As it is, the doctors, the nurses and medical assistants are getting burnt out treating the infected patients round the clock. The vaccination programme will eat into these human resources threatening the rate of recovery. The country needs additional manpower to help in the distribution and administration of the vaccine as early as possible. This is where the universities could extend a helping hand to the country by raising trained volunteer force from amongst the huge students' community at their command. In fact, the government has already roped in the senior medical and nursing students to join the COVID-19 warriors with a view to save as many lives

as possible, if not all. It is well known that the students in many other countries like China, US, UK and other European countries have come forward to fight as the frontline soldiers. Even many students in India under the National Service Scheme (NSS) have joined the battle. It however, appears that the Indian universities are yet to be proactive in these endeavours.

The Need of This Hour

In addition to the creation of a buffer stock of vaccines by way of manufacturing to the fullest capacity in India and also through procurement from abroad, there is an immediate need for mobilizing people power for vaccinations. There is also the need for time, patience and volunteers. An example of vaccinating a city/town with 1 million is worth understanding what this logistical challenge is. Let us see how. India has a population of 1.3 billion or 1300 million or 1300 times 10 lakhs population. The major population centers include Delhi (30M), Mumbai (20M), Kolkata (15M), Bangalore (12M), Chennai (11M), Hyderabad (10M), Pune (8M), Ahmedabad (8M) and many others in the 2-5M range. Let us take an example of any one population center of 1M people (10 lakhs). Imagine we set up 100 units for applying vaccines assuming vaccines are available by proper transportation and storage facilities are adequate.

Each unit will be responsible for administering 500 shots a day with 10 volunteers (2 security personnel, 3 nurses and 2 desk persons in two shifts included). If we can have 100 such units administering 500 shots/day, that will cover 50,000 shots in a day. That will take 20 days to cover 10 lakh people. That means 3 weeks without weekends. Then it will be the time to administer the second shot, which means another 3 weeks. If we start this on a particular day immediately, we would be able to achieve our target by one and half month from the day. We will need another 2 weeks for the immunity to kick in. Thus, the vaccinated people would be safer with in 2 to 3 month.

India has a population of 1.3 Billion (13,000 lakhs). Vaccines are not yet available to be administered in every corner of the country. Once the vaccines are available and a system as above is in place with enough volunteers it will take some time for the country to reach a healthy status. A preliminary estimate of that time can be obtained by accommodating for availability of vaccine and weather related delays and transportation and infrastructure related challenges. This time is about 6 months to a year or more depending on the availability of vaccines and rate of vaccination. An additional factor is for people to stick to COVID-19 protocols (mask, distancing as much as possible and blended work style, and avoid unnecessary travels).

Of course, the above is a very simple model that could be made more realistic and accurate with multiple parameters; but we think the dimension and enormity of the challenge ahead is clear from the above example. Also, the cities with 100 lakhs or more population have a different challenge than rural villages and other suburban towns. But the above idea could work with appropriate adaptation for different centers.

Role that the Indian Universities Can Play

Currently the universities are offering online education and the students are advised to remain confined at home. But the practice could not continue indefinitely. Sooner or later the universities will have to adopt the process of blended learning (combination of online and offline learning) with the help of available educational technologies and connectivity. After all COVID-19 virus is not going to go away. Neither is it going to stop the human-to-human transmission. It would be futile to wait for the return of the pre-COVID ambience. Rather the people have to learn to live with the new normal. The country could expect the universities to come forward and be proactive not only in joining the battle against COVID-19 but also in evolving a new culture for the society.

While safety is a must, could we not rely on our youngsters for service to the mankind in this crisis? Most of these students are adults and would turn out to be global citizens tomorrow. Moreover, the future belongs to them. Perhaps many of them have already come forward on their own to join volunteers in different groups in this hour of need. Should we not prepare them not only for the current challenges but also for the ones that might strike in the near and distant future?

In the opinion of the present authors the universities should design and organize programmes for training at least the senior students who could join the country in its struggle to defeat the pandemic. They could extend a helping hand to the COVID-19 warriors in their endeavours to manage the current situation including mass vaccination. The trained volunteer force comprising of students other than nurses should be able to administer the jab to accelerate the vaccination programme. In the process the students could earn additional credits and certificates they could be proud of.

The universities are now required to redesign and refurbish the infrastructure to accommodate learning in attendance wherever necessary in addition to improving connectivity and acquiring new technologies. Further enhancements to the design of new academic courses, training and new academic programmes with regards to disaster management including pandemic is the call of the hour. The new generation has to learn to live in a new culture that would evolve with the battle with the COVID-19 in the near and distant future. The inadequacy of the existing economic model that governs the world has been exposed and the new model would come out of the universities only.

Looking at the Future (Benefits)

Unfortunately, in the era of Climate Change, it is expected that there will be more pandemics or similar situations which will significantly affect a large portion of population. In his recent book 'How to avoid a climate disaster', Bill Gates has given a sober example of this situation. Let us consider this with a simple metric – 'Loss of life.' Loss of life is relative to the population. We may use death rate (Mortality rate) which is defined as the number of deaths per 100,000 people in a year. Using data from Spanish Flu and from COVID-19 pandemic and averaging out over the century, one can estimate the amount by which a global pandemic increases the global mortality rate. This is determined to be about 14 deaths per 100,000 people each year. This is the rate at which we are losing people unnecessarily; forget about the long-term effects of COVID-19 and loss of economic development.

In his Book, Bill Gates asks: "How does this (mortality rate increase during COVID) compare to climate change?" By 2100, as the temperature increases at increasing rate, IPCC climate model estimate is for 75 more deaths – or FIVE times that of COVID-19. Should we not be prepared to combat both Climate Change impact and COVID-19? Can we not take lessons from COVID-19 and prepare ourselves for the future impact of climate change which is imminent? And this is where the universities can help with their young students and young minds. We should think about creating a task force preparation exercise that can be repeated over and over again at the time of need now, and in the future.

Government and People – People Can Act Faster!

The question naturally comes is why should the government not do this? Well, if anything, history tells us that government machineries are generally slow to react (if willing and able). The recent Intergovernmental Panel on Climate Change (IPCC) report captures this response reaction and possible remedies to climate change (which is applicable for COVID response very well). Harmonizing local, regional and global governance structures could provide an over arching policy framework for action and adaptation (Carlisle & Gruby, 2019; Hamilton & Lubell, 2019; Mewhirter et al., 2018). This polycentric governance idea (multiple centers of decision making with some autonomy) can play a very positive role for combating the effect of COVID and for vaccination in a rapid pace for the whole country.

And, this is where the local universities and schools can play a big role in the next 2 years. They can mobilize student volunteers and teachers for effective vaccination and providing health guidance (masking, social distancing at the same time being productive). They can help train students and teachers just to do the vaccination in a very short time (nothing major – not a full-fledged nurse). So, it is good to have people trained and a process defined as soon as possible which will benefit the local population and they don't need to depend on the government machinery except for provision of vaccine, funding and the benefit of global connection.

Be self-sufficient from a local community perspective. Universities can help locally and globally; NGOs and others can help too.

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National Education Policy–2020: Quantum Leap towards a New Era[#]

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Our progress as a nation can be no swifter than our progress in education. The human mind is our fundamental resource.

–John F. Kennedy

Today education is a pre-requisite for development. Education and trained manpower is a major input for economic and social development. Higher education today, besides its fundamental functions of teaching and training, has to promote development of personality and to prepare responsible, informed citizens, committed to work for the betterment of the society and nation at large. Education is an index of human development. It has always been considered as the instrument of social change. It is the most dynamic force in the life of an individual in influencing his physical, mental, emotional and social development. Throughout the ages the very conception of education has been that it is a source of illumination. What is important is that the fundamental principles that based the ancient Indian educational systems have to be preserved, adapted and given a fresh lease of life in modern conditions.

Although the capacity to learn lies at the heart of humanity, it cannot just happen. It is a difficult and demanding task and has to be systematically constructed. As Joseph P. Healey has pointed out, there are three strands in learning; to be competent, to be engaged and to be ethical. It is in this context that the theme of character development has emerged with some imperative force. And our eyes have turned to the dimensions of values, the dimensions of will power and the dimensions of cultural, ethical and spiritual potentialities. These dimensions have not yet been sufficiently explored, but we have begun to uncover what lies in our present framework that would meet our urgent need to uplift ourselves and the coming generations.

The issues that confront us relate not only to promote education widely and universally, but also what kind of education, so that India can recover her true spirit and it is empowered to stand out in the world as a leader of the future. This is an important question and cannot be brushed under the carpet. Philosophy has to wear the mantle of holistic integrated thinking and give it a benighted world, a modern universally acceptable philosophy of living.

Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration and cultural preservation. Such a lofty goal will require the entire education system to be reconfigured to support and foster learning, so that all the critical targets and goals (SDGs) of the 2030 agenda for Sustainable Development can be achieved.

The world is undergoing rapid changes in the knowledge landscape with various dramatic scientific and technological advances, such as the rise of big data, machine learning and artificial intelligence, many unskilled jobs worldwide may be taken over by machines, while the need for a skilled workforce, particularly involving mathematics, computer science and data science, in conjunction with multidisciplinary abilities across the sciences, social sciences and humanities, will be increasingly in greater demand. With climate change, increasing pollution and depleting natural resources, there will be a sizeable shift in how we meet the world's energy, water, food and sanitation needs, again resulting in the need for new skilled labour, particularly in biology, chemistry, physics, agriculture, climate science, and social science. The growing emergence of epidemics and pandemics will also call for collaborative research in infectious disease management and development of vaccines and the resultant social issues heightens the need for multi-disciplinary learning. There will be a growing demand for humanities and art, as India moves towards becoming a developed country as well as among the three largest economies in the world. The aim must be for India to have an education system by 2040 that is second to none, with equitable

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[#]The article is published to commemorate the I[st] anniversary of the launch of NEP–2020.

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access to the highest quality education for all learners regardless of social or economic background.

The National Education Policy 2020 is the first education policy of the 21st century and aims to address the many growing developmental imperatives of our country. This policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the inspirational goals of 21st century education, including Sustainable Development Goals (SDGs), while building upon India's traditions and value systems. The National Education Policy – 2020 lays particular emphasis on the development of the creative potential of each individual. It is based on the principle that education must develop not only cognitive capacities both the 'Foundational Capacities' of literacy and numeracy and 'high order' cognitive capacities, such as critical thinking and problem solving –but also social, ethical and emotional capacities and dispositions.

A good education system is one in which every student feels welcomed and cared for, where a safe and stimulating learning environment exists, where a wide range of learning experiences are offered, and where good physical infrastructure and appropriate resources conducive to learning are available to all students. Attaining these qualities must be the goal of every educational institution. However, at the same time, there must also be seamless integration and coordination across institutions and across all stages of education.

Further, when we talk about a total human being we mean not only a human being with inward understanding, but with a capacity to explore, to examine his inward being, his inward state and the capacity of going beyond it, but also someone who is good in what he does outwardly. The two must go together. That is the real issue in education, to see when the child leaves the school he is well established in goodness both outwardly and inwardly, it is our duty to plan and build wisely.

Two more educational policies namely National Education Policy (NEP), 1968 and National Policy on Education (NPE), 1986 were adopted. NPE, 1986 was also revised and revamped. It is not out of place to mention here that we had 17 Lok Sabha elections and have seen 32 Ministers of Education, of which except 4 had a duration of tenure lasting less than 2 years and more than 13 had less than 1 year stint in the ministry. This shows education was not an important priority to our political masters.

The first National Education Policy, 1968 had called for a National School System, which meant that all students, irrespective of caste, creed and sex would have access to education of a comparable quality up to a given level and it envisaged a common educational structure (10+2+3) which was accepted across the country and most of us have studied under that system. NPE, 1986 started most of our classic government schemes such as *Sarva Shiksha Abhiyan*, Mid Day Meal Scheme, *Navodaya Vidyalayas* (NVS Schools), Kendriya Vidyalayas (KV Schools) and use of IT in education. More attention was paid on restructuring the teacher education, early childhood care, women's empowerment and adult literacy. It also accepted autonomy of universities and colleges. In 42nd amendment to the constitution, education was transferred from state list to concurrent list.

Provisions of NEP—2020

As per NEP—2020, the present 10+2 structure will be replaced with 5+3+3+4 system. This means that children who have got right to education from the present age group of 6-14 will be replaced by an age group of 3-14. In other words, children are bestowed the right to education from an early age. Government schools will adopt into a system presently practiced by private schools already at pre-nursery, kindergarten levels. This raises the problem of training the *anganwadi* workers/ teachers who are working at present. Most of them are not having essential qualifications. Those who are having essential qualification will be given six months training and those who don't have the qualification will be given one year training by Distance mode education and online method.

The emphasis laid on early education initiatives is commendable particularly the provision of providing guidelines for appropriate cognitive stimulation of toddlers and their parents by an innovative four step pedagogical structure. The policy focuses on developing an excellent curricular and pedagogical framework for early childhood education by NCERT which would be delivered through a significantly expanded and strengthened system of early childhood educational institutions,

consisting of *Anganwadis,* pre-primary schools/ sections co-located with existing primary schools and stand-alone pre-schools, all of which will employ workers/ teachers specially trained in the curriculum and pedagogy of ECCE. The motivation and encouragement to enroll and attend school are targeted to be achieved by an effective mid-day meal programme.

The 5+3+3+4 format is divided into various stages: foundation stage is of 5 years period which includes 3 years of pre-primary school and 2 years of classes 1 and 2. Pre-primary level will be full of activity only and no examination, it is only play and learn. The teacher's role is to allow the child to play. The next two years are the present first class and second class of primary school where the education will be only in the mother tongue. The next 3 year is termed as preparatory level. The child will study in regional language only and he or she will have first exam of academic career only at the end of the final year. If as in the present the child wants to study in English, he or she has the option of private schools anyway which can continue to teach in English.

The middle stage consists the present 6th, 7th, 8th standards. The student will be taught computer operations, given computer knowledge, imparted vocational training in his chosen field. The child will also study mathematics, science and arts. The student may be taught tailoring, drawing, carpentry, gardening or anything he or she likes to do at this level. He or she will collect marks for each of this activity. Another Indian language also will be of study at this stage. An examination will be conducted at the end of the stage.

The Policy asserts the importance of mother tongue and regional languages. As per this, the medium of instruction until class 5 and preferably beyond should be in these regional languages. No language will be imposed on the student. Final four year period termed secondary stage consisting of the present ninth to twelfth standards and will have 8 semester examinations. No streaming will be there such as arts, science or commerce. Multiple subjects belonging to any streams can be chosen and studied. There will not be any water tight compartment between these selections of subjects. At this stage another international language will have to be studied. The testing will be more on the concept, critical thinking, knowledge application and analytical ability to grade the student and not the present parroting or rote system.

Holistic Report Cards will be offering information about the student's skills. Coding will be introduced from class 6 and experiential learning will be adopted. The mid day meal scheme will be extended to include breakfasts. More focus will be given to student's health, particularly mental health, through the deployment of counselors and social workers. The NEP has an ambitious plan to increase the Gross Enrolment Ratio goals by 2035 the secondary school GER to be raised to 100% from present 56.5% and higher education GER from current 26.3% to 50%.

Under NEP–2020, numerous new educational institutes bodies and concepts have been given legislative permission to be formed. This includes National Education Commission, headed by the Prime Minister of India, Academic Bank of Credit, a digital storage of credits earned to help resume education by utilizing credits for further education, National Research Foundation, to improve research and innovation, Special Education zones, to focus on the education of underrepresented groups in disadvantageous regions, Gender Inclusion Fund, for assisting the nation in the education of female and transgender children, National Educational Technology Forum, a platform to facilitate exchange of ideas on technology usage to improve learning.

The policy proposes to internationalize education in India. Foreign universities can now set up campuses in India. The earlier proposal made by the previous government to keep a security deposit of Rs. 50 crore by the foreign universities was not acceptable to them. The present proposal will allow only topmost 50 foreign universities to open their campuses and this will also allow competitiveness amongst our universities and they will have to cope up, with the trend. There will be four separate departments to deal with syllabus, regulations, salary structure and evaluation process in the education system. The fees structure of both private and public universities will be fixed by the government.

Today, we have a lot more learners than ever in the history of mankind, the number of subjects and complexity has increased multi-fold, '*gurur brahma gurur Vishnu gurur devo maheshvaraha'* has become the *mantra* of the past. It is impossible for

the *guru* to have the kind of comprehension that was once possible. The advent of digital storage and the internet, the requirement for learning due to rapidly and dramatically the original curriculum becoming absolete and the attitude and approach of the current generation putting education and work together etc. the onus of learning is shifting from the teacher to the learner. This is particularly pronounced in higher education and hence learner-centric models for universities have to be thought of. In spite of the above, the position of the teacher at the centre of the fundamental of reforms cannot be denied in school and college education. He has to be trained continuously to keep abreast with the changing environment both within education and off the education field, as the learner has the choice to start and stop learning, this will become all the more important.

Many of the questions that will have to be resolved for successful implementation of the policy include --- provision of both infrastructure and super structure for schools and colleges including infrastructural furniture and fixtures, digital connectivity, etc.; training of teachers; erecting suitable edifice of educational system right from supervision to guiding administration; revision of pay structure, working out interfaces and sorting and smoothening out difficult areas of professional standards and ethics; drafting entirely new syllabus right from pre-nursery to university level, industry education interfaces etc. This will need a dedicated team to implement the policy in right earnest. A stupendous task of demolishing the century old Macaulay system of recruiting clerical staff for Her Majesty empire and shaping the education system of the country in indigenous way is ahead.

The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India. The policy aims to transform India's education system by 2040. The education in India is a concurrent subject and state governments can adopt flexible attitude switching over to NEP–2020 or also can devise their own policy. It is only a broad direction.

Full restructuring along these lines is the long term goal for which the policy sets a deadline of 2035. But the policy contains many low hanging fruits that can be harvested in five or fewer years. These include conversion of leading colleges into board administered, autonomous, degree giving HEIs; freeing up undergraduate students to take courses across all disciplines; launch of a four year bachelor's degree; opening India to foreign universities; incorporating vocational education in college curriculum and creation of a National Research Foundation. The government must draw up a time bound plan to implement these changes over the next five years.

NEP seems to have woken up to the fact that education can be truly democratized only through online teaching methods. The policy makes the right noises calling for a blended approach (physical and online). It calls for enhanced access to take quality education to the farthest reaches of the country through digital means.

It is interesting to note that the student can re-enter at any stage to complete his graduation levels, incase he wants to break from pursuing studies for whatsoever reason. He will join the course where he has dropped out and he does not have to join from the initial year stage. Of course, minimum year's completion at each stage is required. Marks will be awarded based on four methods namely, the marks gained through examinations, self assessment, peers and teachers assessment. The peers and teachers assessment means the student will have to keep good relations with his peers and teachers.

Another striking feature is the concept of Academic Bank of Credit which could be accumulated and/or transferred. It provides the liberty to learn multiple disciplines may be specialize for 3 year, in your domain and broaden out and minor in another discipline in the 4th year. Or acts like an insurance policy help in case the re-entry of students who may exit early to work and return to work towards a full degree.

The NEP–2020 puts forward many policy changes when it comes to teachers and teacher education. To become a teacher, a four year Bachelors Degree of Education will be the minimum requirement needed by 2030. The teacher recruitment process will also be strengthened and made transparent. The National Council for teacher education to frame a National Curriculum Framework for Teacher Education by 2021 and a National Professional Standards for Teachers by 2022. The policy aims to ensure that all students at all levels of school education are taught by passionate, motivated, highly qualified, professionally trained and well equipped teachers.

NEP–2020 acknowledges that no reform will work unless the teacher is brought centre stage. Teachers would also go through a rigorous interview procedure, this would help curb back-door entries and positions being filled by incompetent professors. The teacher eligibility test would be redesigned, along with this teachers would have to effectively demonstrate their respective knowledge in the teacher ratio of (30:1) enhancing and increasing the number of students would also increase employment opportunities for teachers, especially where the policy talks about making the Teacher Eligibility Test inclusive for all the four stages.

Additionally a much needed change is certain freedom being given to a faculty to choose their session plan, this becomes very important since institutions many a times fail to revamp the redundant syllabi teaching the same old theories having near-zero relevance in the contemporary era.

Recognizing that the teachers will require training in high-quality content as well as pedagogy, teacher education will gradually be moved by 2030 into multidisciplinary colleges and universities. As colleges and universities will move towards becoming multi-disciplinary, they will also aim to house outstanding education departments that offer B.Ed., M.Ed. and Ph.D. degrees in education.

Further, a separate body called the National Higher Education Regulatory Authority would undertake the function of funding, accreditation and regulation which exemplifies the readiness to grant 'autonomy'.

The policy provides apparent relief to students forced to drop out of college. However, this implicitly shifts the onus of effective learning from the institution to the student, breeding a 'survival of the fittest' mind set, which is incredibly damaging to the aim of inclusive, higher education. The assurances of such certifications also create a false sense of security, as presently it is wholly unclear what the value of these will be in the highly competitive job market.

Further the proposal to allow flexibility in choice of subjects in Grade will only translate into reality for the vast majority of students if such flexibility is adopted by higher education institutions as well.

The education policy incorporates digital education, without considering the fact that not all people have access to smart phones, laptops and tablets. The poorest households cannot afford a smart phone or a computer. The Government as per the budget may not be able to make all this available to every student. Hence the issue of "access to technology" and network connectivity needs to be resolved first before being dependent upon heavily and using their assistance to improve the educational system. Internet connectivity is still not resolved even prominent international universities are not yet well-equipped to provide promising internet connectivity facilities.

The policy commits to significantly raising educational investment, as there is no better investment towards a society's future than the high quality education of our young people.

In-order to attain the goal of education with excellence and the corresponding multitude of benefits to this nation and its economy, the policy unequivocally endorses and envisions a substantial increase in public investment in education by both the Central Government and all State Governments. The Centre and the States will work together to increase the public investment in education sector to reach 6% of GDP at the earliest. This is extremely critical for achieving the high quality and equitable public education system that is truly needed for India's future economic, social, cultural, intellectual and technological progress and growth.

In 1966, the Kothari Commission after deliberating for two years had recommended 6% of the GDP to be spent on education for India to make the requisite progress in education-a north pole metric so to speak. These targets were set back in 1966. The targets had to be achieved by 1986. More than half a century past, we are still short of the target. Three generations down but India is still pending between 3.5-4% of GDP on education.

National Education Policy envisions an educational system rooted in Indian ethos that contributes directly to transforming India, into an equitable and vibrant knowledge society, by providing high-quality education to all and thereby making India a global knowledge superpower. The policy envisages 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, bonding with one's

country and a conscious awareness of one's roles and responsibilities in a changing world. The vision of the policy is to instill among the learners a deep-rooted pride in being Indian, not only in thought, but also in spirit, intellect and deeds, as well as to develop knowledge, skills, values and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.

We need to rightfully glorify and make teaching one of the most noble and aspired professions for the best and the brightest, NEP aims to touch the life of every citizen. Key objectives of the NEP mentions reforms in curriculum, universalisation of early childhood education, national mission for Foundational literacy, accreditations to shift focus from inputs to outcomes, and change in governance structures to ensure that the operator, the regulator and the adjudicator are not the same, are all laudable and potentially disruptive.

The NEP–2020 leaves a number of questions unanswered and expectations unfulfilled, for instance the Right to Education Act, which was proposed to be extended in scope in one of the drafts of the NEP, remains regrettably unchanged. Also, the document makes no explicit mention of reservations for SCs, STs, OBCs and EWS categories in higher education institutions, using instead the undefined term SEDGS (Socially and Economically Disadvantaged Groups), in the passing. This raises the serious question of what vision the document proposes on this issue, which is a safety net to lakhs of Indian students.

It is hoped that in the course of implementation these problematic and ambiguous provisions will be ironed out, and the final goal of ensuring inclusive, effective and universal education will remain the foremost priority. It is effective governance and leadership that enables the creation of a culture of excellence and motivation in higher education institutions.

Although the policy emphasizes a lot of positive changes such as more stress on vocational and skill based education, it at the same time poses the challenge of nationwide implementation and achieving the desired out comes.

Another question that remains unanswered is the process through which education is to be imparted in the mother tongue. Although kept as non-mandatory, the clause of the policy recommendation has got thumbs up from most of the academicians where the population speaks only one language. However, implementation of the same in areas with diverse population will be a challenge.

The government needs to run strong campaigns to emphasize the need for change and to invest in curriculum structures and practices that re-humanise and re-build our ailing education system.

The autonomy granted to private higher education institutions offering professional courses need to be re-thought, if policy aims to make education affordable then such autonomy and freedom would grant these institutes the freedom to fix their fee structure which would not cater to the middle, lower-class. As it is, the high fees charged by big brands remains an issue even today.

Corruption, commercialization, or deviation from the set norms should attract heavy penalties for the wrongdoers who try to manipulate or jeopardize the education system. It is time to acknowledge our role as being dutiful citizens, the success of any policy is never one sided. It does not solely depend upon the legislature or executive but also how the policy is perceived and utilized by citizens of the country. Encouraging children to attend school, conducting fruitful lectures, and attending classes are the tasks to be performed by parents, teachers and students. With several challenges standing in the way, the main objective of this policy is to transform the educational landscape and raise the standard of education in India.

The current education system will need to undergo a complete re-imagination and transformation at all levels including governance, disciplines, institutional capacity, regulatory reforms, curriculum, faculty development and student initiatives to achieve the desired multi-disciplinarity, says Prof. Rajkumar. He adds, "The institutions will need to expand their horizons to incorporate multiple disciplines. The curriculum structure will need to evolve and become more flexible to enable students to have greater freedom of choice in the subjects they study."

For instance, in course offerings, the availability of multi-disciplinary, cross-listed electives is a useful way to encourage students to think and learn outside their chosen subject areas. This in turn, will require faculty members to evolve their teaching and assessment methodologies. Universities may also need to undergo infrastructure upgrades to incorporate

holistic learning through conscious and deliberate design of their physical infrastructure and facilities.

The proposed introduction to the concept of multi-disciplinary learning in NEP–2020 will help make future generations of students more multi faceted professionals with better analytical and problem solving skills says Sivaram Krishnan Venkateswaran, Managing Director, Oxford University Press India, "Learners are seeking newer and unconventional career paths and our learning pedagogies must be in sync with those aspirations. There is a growing demand for subject combinations, flexibility in choosing streams based on learner interest and ease of entry and exit from courses, all emanating from contemporary career choices emerging in the domestic and international job market.

Professor Malabika Sarkar, Vice Chancellor, Ashoka University, says, "The Indian education system currently moves young minds very early into rigidly confined disciplinary pathways without any freedom to move across disciplines. The model proposed by the NEP–2020 will encourage and enable them to move across and beyond such barriers. This will release fresh energies and enable the full potential of each student to blossom.

The decision to move towards a multi-disciplinary system of education without any rigid boundaries between subjects, courses and streams is a step in the right direction. Integrating arts and humanities with the social sciences and sciences has consistently shown positive learning outcomes. In a post COVID-19 world, skills such as critical thinking, problem–solving adaptability and flexibility are invaluable- recruiters would look to hire employees with skills across domains.

Adds Prof. Sarkar, "giving students the flexibility to choose subjects across disciplines will help them in their careers. Modern day organizations are not looking for specialists who rely on a narrow set of skills. Recruiters today are looking to hire deep generalists-people who combine two or more diverse discipline and integrate them into something unique."

In this regard, a multi disciplinary system of education, as suggested by the NEP (National Education Policy) 2020, is an aspiration to provide students with a well-rounded holistic and flexible education. A multidisciplinary system of education is something that will bring together the world of STEM (Science, Technology, Engineering and Mathematics) institutions with liberal arts and social science institutions. It also aspires for a future where there is focus on professional and vocational education, all under one roof. Says Prof. C. Rajkumar, founding, Vice-Chancellor of O.P Jindal Global University, "This means that students will have greater freedom to explore opportunities and access multiple disciplines while focusing on a particular specialization, and eventually come out as more well-rounded individuals who not only have an understanding of their core subjects, but also develop creativity and other important skills such as critical thinking and problem-solving." Most importantly, the integration of STEM with social sciences, liberal and vocational studies will result in students who are creative, skilled and intellectually curious. Even from a research point of view, it will result in improved and increased productivity.

This multidisciplinary approach to education is needed now more than ever before. The pros of this approach, in particular, are that it makes the youth more evolved as responsible leaders of the future, diversifies their perspectives and teaches them to look towards building solutions that take into consideration multiple perspectives. It also allows students to explore various territories of careers, without being bound to any one area that they are otherwise compelled to choose early on in their academic journey. However, it must be ensured that students receive the right counseling, mentoring and guidance, so that they can reap the benefits of this approach.

With the mainstreaming of automation and artificial intelligence, the jobs of the future will require skills such as critical thinking, logical reasoning, problem solving and soft skills. These skills also help inculcate lateral thinking, which is necessary to solve modern-day business problems. Says Dr. Sarkar, "Further, such an education develops all capacities, of human beings- intellectual, aesthetic, social, physical, emotional and ethical, in an integrated manner. In addition to being essential for success at the workplace, they teach how to learn instead of what to learn. These skills enable life long learning and equip students not just for a career but for life."

Implementation of the spirit and intent of the policy will be the most critical matter. Second, it

is important to implement the policy initiatives in a phased manner, as each policy point has several steps, each of which requires the previous step to be implemented successfully. Third, prioritization will be important in ensuring optional sequencing of policy points and that the most critical and urgent actions are taken up first, thereby enabling a strong base. Fourth, comprehensiveness in implementation will be key; as this policy is interconnected and holistic, only a full fledged implementation, and not a piecemeal one, will ensure that the desired objectives are achieved. Fifth, since education is a concurrent subject, it will need careful planning, joint monitoring, and collaborative implementation between the Centre and States. Sixth, timely infusion of requisite resources-human, infrastructural and financial-at the Central and State levels will be crucial for the satisfactory execution of the policy. Finally, careful analysis and review of the linkages between multiple parallel implementation steps will be necessary in order to ensure effective dovetailing of all initiatives. This will also include early investment in some of the specific actions (such as the setting up of early childhood care and education infrastructure) that will be imperative to ensuring a strong base and a smooth progression for all subsequent programmes and actions.

There will be no magic wand and no single solution. Help and initiative from whatever quarter must be sought and grabbed by both hands. India's higher education system originally designed to serve the elite will now have to serve the people. Innovation and change are required and understanding that change will be essential.

Enabling an education that is relevant to the economy and society is another challenge. The point however is to identify workable solutions. Whilst finance is undoubtedly important, governance is the key. We have to walk together, we have to think together, we have to work together and together we can take this country forward. We should take up the challenges of governance by reforming the policies and systems of governance. So that the enormous aspiration of our people can be fulfilled with vision, commitment, integrity, speed and administrative capability. Stagnant minds create immobile systems which becomes road block to growth. India demands creative thinking in governance that enables fast track development and ensures social harmony. Good governance is critically dependent on the rule of law, participatory decision making, transparency, responsiveness, accountability, equity and inclusiveness.

"Life is no straight and easy corridor along
which we travel free and unhampered,
but a maze of passages,
through which we must seek our way,
lost and confused, now and again
checked in a blind alley.
But always, if we have faith,
a door will open for us,
not perhaps one that we ourselves
would ever have thought of,
but one that will ultimately
prove good for us."

A. J. Cronin

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Reimagining New India of Our Dreams

Raghunath Anant Mashelkar (Padma Vibhushan), FRS, National Research Professor delivered the 13th Convocation Address at the Convocation Ceremony of TERI School of Advanced Studies, New Delhi on December 08, 2020. He said, "There is no limit to human endurance, no limit to human achievement and no limit to human imagination, excepting the limits you put on your mind yourself. Be 'limitless' in terms of your imagination. So every day, when you wake up, no matter how old you are, say to yourself that my best is yet to come and may be today is that day." Experts

It is a great honour and a privilege to deliver the 13th Convocation address of TERI School of advanced Studies (TERI-SAS). Its mother institution, The Energy Research Institute (TERI). had distinguished itself globally through its path breaking contributions. I am delighted to see that TERI SAS itself is creating its own distinctive imprint in the area of sustainable development.

I want to begin by congratulating the parents first. Education is the best gift that you could have given to your children.

I want to then congratulate the graduates of the day. When our generation graduated, India was a third world country. When you are graduating, India is well on its way to become the third most powerful country in the world. And my young friends, it is you, who will be charged with building this great future of our great nation. They say that institutions can't build the future of the young, but they can build the young for the future. You are fortunate that your *alma mater* has equipped you fully with skills and tools to deal with this challenge most confidently.

We are meeting virtually in the midst of this Coronavirus pandemic. There has been an unprecedented destruction of lives and livelihoods. The whole world is now in a reset mode.

When we in India are trying to reset and recover, there is an opportunity in this adversity of rethinking and reimagining the new India of our dreams so that we achieve not only recovery but green recovery, not just growth but accelerated green growth.

How to the achieve that is the theme of my Convocation address today. We have experienced pandemics before, be it Yellow fever, SARS, Ebola, Swine flu or the current coronavirus pandemic. Both pandemics and climate risks lead to a range of devastating socioeconomic impacts. There is a striking similarity between the shocks and aftereffects of pandemics and elimate risks.

First, the knock-on effects of pandemics propagate fast across a hugely interconnected world.

Second, their socioeconomic impact grows disproportion ally and even catastrophically once certain thresholds are reached, like hospitals falling short of ICUs.

Third, they exacerbate the vulnerabilities in the system, which always existed, but were never tested. The vulnerabilities of public health care systems, that of extreme inequalities, is a case in point. In India, we witnessed the impact of these, when we saw millions of poor migrant workers walking to their villages, or when our public health infrastructure got overwhelmed.

Fourth, they affect disproportionally the most vulnerable populations of the world. Look at the present pandemic. In nearly 100 days, over 100 million families plummeted from poverty to extreme poverty. In nearly 100 days, 450 million jobs were lost. In 100 days, 1.6 billion children were thrown out of school, with one third of them suffering from digital deprivation having no access to on line learning.

The current Coronavirus pandemic is possibly a trailer of what a full-fledged climate crisis could mean in terms of simultaneous exogenous shocks both on the supply side as well as the demand side, how huge disruption of supply chains would take place and how the amazing play of global transmission and amplification mechanisms will be on display.

This trailer also has a lesson for us that the costs of a global crisis of this dimension is bound to vastly exceed those of its prevention, so we must do everything possible to prevent it.

And mercifully, the drivers of such a prevention are emerging. Among them, the foremost is the indomitable human spirit that fought all the previous pandemics and won in each case. Then I will put emerging 3Ds at the top of the list, namely digitalisation, decentralisation and decarbonisation. If

these 3 Ds are backed up by bold policy measures, we could not only reimagine but reinvent a new India of our dreams.

Let me explain each of these 3 Ds.

The First D is Digitalisation.

Our visionary PM's dream of digital India is taking great shape. For example, it took India 25 years for 2G broadband cellular network technology, but India moved to 4G in just 3 years, thanks to the audacity of Jio, and the same audacity helped India to jump from 155th position in mobile data consumption to the first position in just a matter of few months. And then comes the global race, next generation SG race, in which, again Jio is rolling it out in India with fully indigenous developed network, technology, hardware. Take Telehealth. 50 million Indians accessed healthcare online from March to May 2020, with 80 percent of all telemedicine users and patients using it for the first time. Look at mobile payments. India jumped to number one position during the last month.

The Second D is Decentralisation.

In every endeavour, be it energy, water, health, manufacturing, services, and you name it, development of technologies leading to decentralisation is on cards. Working from home, telemedicine, digital financial transactions are gathering pace and all of them mean decentralisation that is leading to decarbonisation. Take health as an example. Rather than having centralised medical testing facilities, creation of decentralised point of care non-invasive user friendly testing technology is leading to decentralisation.

Internet of Things {lOT]-connected devices- are helping people to fight COVID-19 and enabling the sharing of data with their doctors from their homes. Let me give you an example.

In my mother's name, I have created Anjani Mashelkar Inclusive Innovation Award. This is the tenth year of the award.

It went to a young start up, Dozee, which created a contact free health monitor based on lOT, that can be placed below a mattress and track vital parameters. Within minutes, it can convert any bed into a continuous health monitoring unit, almost like converting normal beds into step down ICUs, and that too at 10% of the cost. This means care at home, for high risk patients, for home isolation of COVID-19 patients and so on. This is decentralisation, hospital at home.

As far as energy is concerned, decentralised creation and consumption is on the cards, shifting to decentralised micro grids. In a way, we are coming the full circle. Before large scale electricity grids were rolled out, electricity started off local, and decentralised, with a patchwork of micro-grids operating across cities. These isolated micro-grids were then integrated and centralised. Larger 'utility-scale' power stations served homes and businesses in cities, and could be situated far away from where the power was used, due to the advent of Alternating Current {AC). We may be coming full circle, then, as decentralisation initiatives take root and spread. The real drivers are advances in renewable energy technology, energy storage and the power of data.

The Third D is Decarbonisation.

We need green growth and for that we will need green technologies, that will help us become net carbon neutral in coming years. Renewable energy, be it solar or wind or bio based, will be the key. The focus is shifting to new economies, like bio economy based on biofuels technologies, hydrogen economy based on hydrogen fuel cells technology, etc.

Industry is accelerating the process of decarbonising, by prioritising the retirement of economically marginal, carbon-intensive assets, through the use of shorter supply chains, creating higher energy-efficiency manufacturing and processing and digital transformation from manufacturing to marketing.

Let's look at manufacturing. 3D printing, which is based on additive manufacturing, is helping in decentralised manufacturing and doing away with carbon footprint created in huge supply chains in normal mass manufacturing.

In summary the 3Ds are completely interdependent. Digitalisation creates decentralisation, which in turn creates decarbonisation. The 3 Ds are transformative. But as I said earlier, these 3Ds have to be backed up by a policy action. Policy is the main difference between the current energy transition and past energy transitions, such as coal to oil to natural gas. This is shown in the 2019 report by Oxford Institute of Energy Studies.

Governments have used a variety of policy tools to accelerate decarbonisation. Policies have varied from direct stimulation of the deployment of renewable technology {feed-in tariffs, feed-in premiums, production tax credits, investment tax credits, green

certificates, renewable portfolio standards) or favour the technology progress of renewable energy {financial support for R&D) or create polices aimed at directly reducing carbon emissions {carbon taxes and cap-and-trade systems) are examples.

In India, we have seen the impact of bold policy initiatives, let's take just one example. Let us take lighting industry, which is a consumer of around 15% of the energy we produce. India launched the world's largest lighting replacement project by setting up this aspirational idea of 'Affordable LEDs for All' in our UJALA mission.

The policy level innovations were done in terms of demand aggregation, competitive bidding, standardisation and system delivery innovation.

The market share of LEDs went from 0.3% to 80% in just nine years. The price of a 9W LED bulb plummeted from seven dollars in 2009 to one dollar in 2018. India did it with speed too. It was thought that technology adoption will take five years but India did it in six months. India achieved scale. 100 million plus LED bulbs were distributed in record time. This led to sustainability by eliminating the release of 3 million tonnes of carbon dioxide per year. 0.85 tonnes of carbon dioxide is released per megawatt hours in coal based power plants. So the sustainability impact is huge!

So my friends, here is a brilliant example of what magic India can do with speed, scale and sustainability by riding on the wave of 3Ds with a 4th D added, and that being the Determined action backed by bold policy and immaculate execution.

At the end, my young friends, you will tell me, you are 77, you are playing the 4th inning of your life, but we are just beginning the first inning. What are the lessons that you can give us from the book of your life?

I will give you five Mashelkar Mantras, which have helped me in my life. I hope they will help you too. Here they are, First, the beginning of your own life is not in your hands, but where you end up, is. You can't predict your future, when you are beginning your journey. When I was studying Newton's laws of motion in college, I did not realise that less than 4 decades later, I will sign in the same book as Newton did, while getting inducted as a Fellow of Royal Society in a ceremonial process in London.

As a poor boy, the only son of a struggling poor widowed mother, I was going to leave studies. I could survive and study because of a Tata scholarship. I would not have imagined that the head of the house of Tatas, Ratan Tata and I will receive Padma Bhushan award, in the same ceremony in Rashtrapati Bhavan on 17 March 2000, at the hands of late President R K Narayanan, who could also, continue his studies due to a Tata scholarship, just like me.

So the first Mashelkar *Mantra* is—'your aspirations are your possibilities. Believe in yourself and keep them high'.

My Second *Mantra* is—'there is no substitute to hard work for becoming successful'. Like instant coffee, there is no instant success. I have myself worked 24x7, week after week, month after month, year after year and will do so till I take my last breath. The golden rule is the following. Work hard in silence. Let success make a II the noise.

My Third *Mantra* is—'perseverance matters'. It is always too early to quit. Quitters are never winners and winners are never quitters. Interpret FAIL as your first attempt in learning. Your best Guru is your last mistake as long as you learn from it.

My Fourth *Mantra* is —'be always a part of a solution, never part of a problem'. If you can't find the way, create your own new way. You wiII keep on knocking on the doors. Don't get frustrated if they don't open. Create your own doors.

My Fifth *Mantra* is—'there is no limit to human endurance, no limit to human achievement and no limit to human imagination, excepting the limits you put on your mind' yourself. Be limitless in terms of your imagination. So every day, when you wake up, no matter how old you are, say to yourself that my best is yet to come and may be today is that day.

My Young Friends, all my best wishes and choicest blessings will be always with you, when you keep on climbing on this limitless ladder of excellence and bring glory not only to yourself, to your family, but also to our beloved nation, our glorious motherland.

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Webinar Lecture Series on Research Methodology

A four-day Webinar Lecture Series on 'Research Methodology' was jointly organised by Research and Development Cell, GTN Arts College, Dindigul, Tamil Nadu and ESN Publishers, Arupukottai, Virudhunagar, Tamil Nadu from July 18-21, 2021. The Webinar Series of twelve lectures was exclusively on the various facets of research. During Inaugural Session, Convener, Dr. P Ravichandran and Associate Professor, Department of Economics welcomed the gathering and explained about the webinar series. The presidential address was delivered by Dr. P Balagurusamy which was very informative, soothing and pertinence to the present trends of research. Dr. N Rajasekar, Coordinator and Head, department of Physical Education conferred the vote of thanks. About 554 participants were actively participated for the webinar series. At the end, the participants were given the webinar topic related soft materials, which may be useful for the young researchers who are pursuing their Ph. D. The guides and faculty members were gained the knowledge regarding journal selection, format of thesis and pilagiarism check software and importance, consequence, etc. Convenor, Dr. P Ravichandran, Associate Professor of Economics welcomed the gathering and explained about the webinar series. The presidential address was delivered by Dr. P Balagurusamy. Coordiantor, Dr. N Rajasekar, Head, Department of Physical Education proposed the Vote of Thanks.

During the first lecture, Resource Person, Dr. J Arumugam**,** Librarian, PSG College of Technology, Coimbatore spoke on the topic 'Research Metrics and Measurement to Entrance Research Visibility'. He also discoursed the aspects of publication ethics and identification of predatory journals. The participants gathered useful information from his lecture. Dr. Nivetha Martin, Assistant Professor of Mathematics was the moderator of the session.

Mr. R Gowtham, Researcher in Taxation, Accounting and Finance was the Resource Person during the next series. He delivered his lecture on 'Literature Review'. The lecture comprised of a comprehensive presentation on the elements of literature review. The do's and don'ts of preparing the literature review was well stated with suitable substantiation. The session was interactive and informative. Dr. P Pandiammal introduced the resource person and Dr. Nivetha Martin was the moderator of the session.

Dr. M Bhuvaneswari, Assistant Professor, SRM Institute of Science and Technology, Chennai was the Resource Person of the session on 'Journal Selection and Publication'. Dr. Bhuvaneswari delivered a lecture on the aspects of selection of journal and the ethical values to be followed in publishing the articles. The ways and means of identifying genuine journals and to avoid the predatory journals are well explained. The session was discoursed in pragmatic manner and very useful to the participants. Dr. P Pandiammal introduced the resource person and Dr. P Ravichandran, Associate Professor of Economics was the moderator of the session.

Dr. K Ramasamy, College Librarian, M V Muthiah Government Arts College for Women, Dindigul delivered the lecture on 'Author Profile Management Systems'. Dr. Ramasamy presented the various ways of author profile management systems. The session was highly informative and useful to the participants. Dr. P Pandiammal, Assistant Professor of mathematics, GTN Arts College introduced the resource person and Dr. Nivetha Martin, Assistant Professor of Mathematics was the moderator of the session.

Mr. L Santhosh Kumar**,** PG and Research Department of English, Bishop Heber College (Autonomous), Trichy delivered the lecture on TIPS on Avoiding Plagiarism and Mechanism of Plagiarism Software'. The session highlighted the software predominantly used for avoiding plagiarism. The lecture was informative and it attuned to the need of present research. The session was moderated by Dr. P Pandiammal.

Mr. Rahul Chauhan, Assistant Professor, Parul Institute of Business Administration, Parul University, Vadodara delivered the lecture on 'Writing Research Paper'. The resource person presented the nuances of writing a research article. He focussed on the elements of the perfect article and gave suggestions to draft a good research paper. Dr. P Pandiammal introduced the resource person and Dr. Nivetha Martin was the moderator of the session.

Dr S Veeramani, Assistant Professor and Research Advisor, Department of English Government Arts

College, Kulithalai delivered the lecture on 'Research Design and Methods In Social Sciences'. The session highlighted the design and methods of research with special focus in social sciences. The lecture discoursed many useful aspects of research. Dr. P Pandiammal acted as the moderator of the session.

Resource Person**,** Dr. Nivetha Martin, Assistant Professor of Mathematics, Arul Anandar College (Autonomous) Karumathur delivered the lecture on 'Transdisciplinary Research Approaches'. Dr. Martin presented the dynamics of transdisciplinary research with respect to global significance. The session was delightful and the participants clarified their queries. Dr. P Ravichandran, Associate Professor of Mathematics acted as the moderator of the session.

Resource Person**,** Dr. P. Karthikeyan, Associate Professor, School of Management Studies Kongu Engineering College, Erode delivered the lecture on 'Concept Development And Model Building For Social Science Research'. The resource person highlighted the research design in social science with suitable illustrations and substantiated the same with in conceptual development in building social models. Dr. P Pandiammal, Assistant Professor of mathematics, GTN Arts College acted as the moderator of the session.

Ms. Suvangi Rath, Founder, Vigyan Vartan International e-Magazine for Science Enthusiasts, (Odisha), Researcher, Agricultural Economics (OUAT) was the Resource Person of the next lecture. The session was on 'Publication Ethics'. The resource person presented the need of maintaining the ethical principles in research. The publication ethics and the standards to be followed in publishing the articles were well presented. The session was very interactive and participants clarified their queries. Dr. P Ravichandran, Associate Professor of Economics was the moderator of the session.

Dr. Ajay B Gadicha, Head of Department, Computer Science and Engineering, P. R. Pote College of Engineering and Management, Amravati University, Maharashtra delivered the lecture on 'Reference Management Scientific Software for Citation and Bibliography'. The resource person presented a lecture on the ways to use software for managing reference and other plagiarism detection tools. Dr. P Ravichandran was the moderator of the session.

During the last lecture of the series, Dr P Malyadri, ICSSR Senior Fellow, Research Advisor in Commerce and Management Centre for Economic and Social Studies, Hyderabad spoke on 'Strategies for Writing Good Quality Thesis'. The resource person shared his expertise on the nuances in writing a good quality thesis. The session was informative and useful to the participants. The moderator of the session was Dr. P Ravichandran.

The participants shared their feedback about the four days of lecture series delivered by eminent and resourceful resource persons. They expressed their joy and experience over these days. Dr. M Ponniah, Dean, Research shared a few words on a researcher's journey. The four days of research journey ended with the Vote of Thanks proposed by the Convener, Dr P Ravichandran, Associate Professor of Economics, GTN Arts College, Dindigul.

International Conference cum Workshop on Rhythm of Happiness

A three-day International Conference cum Workshop on 'Rhythm of Happiness: A Multidisciplinary Exploration' is being jointly organized by Rekhi Centre of Excellence for the Science of Happiness, Indian Institute of Technology (IIT) Kharagpur, School of Languages and Linguistics, Jadavpur University, Kolkata and Sir C. V. Raman Centre for Physics and Music, Jadavpur University, Kolkata during December 10-12, 2021 at IIT Kharagpur.

Rhythm is a part of our very existence. How does rhythm contribute to happiness? How does happiness lead to rhythm? A search for the answer would lead one to multiple disciplines– bio-rhythms, neuro-rhythms, cosmic rhythms, ecological rhythms, socio-cultural rhythms, rhythms in music, art and culture, and rhythms in our everyday life. In each of these areas, rhythms contribute significantly, they also interplay and impact our state of happiness and wellbeing in interrelated ways. This conference proposes to explore these fundamental questions in the areas cited above, as well as in ways that many of them are interrelated. The Subthemes of the Event are:

- Influence of Rhythm on Happiness and Wellbeing: Cognitive and Bio-sciences Perspectives.
- The Rhythms of Happiness in Music, Visual Arts and Dance.
- Rhythms in Everyday Life and Culture and their Contribution to Happiness and Wellbeing.
- Rhythm and Positive Psychology.
- Rhythm in Sound and Vibration: Wellbeing from Philosophical and Scientific Perspectives.

- Rhythm of Positive Communication: Language and Speech, Poetry.
- Ecological Rhythm, Environment and Wellbeing.
- Interdisciplinary Exploration of Rhythm and Happiness.

For further details, contact Organising Secretary, Indian Institute of Technology (IIT) Kharagpur-721302, West Bengal, Mobile No: 06291458725, E-mail:*icrhrhythm2021@gmail.com.* For updates, log on to: *https://sites.google.com/view/rhythm2021/*

National Training Programme on Hands-on Training on Techniques in Molecular Biology

A ten-day National Training Programme on 'Hands-on Training on Techniques in Molecular Biology' is being organised by Animal Biotechnology Centre, ICAR-National Dairy Research Institute (Deemed University) Karnal (Haryana) during August 21-30, 2021. The training programme is sponsored under ICAR's Development Action Plan for Scheduled Caste (DAPSC). The Scheduled Caste (SCI Community Faculty, including research staff (RAs and above) of ICAR/SAUs and CAUs and other Universities/ Institutes may participate in the event.

Molecular biology techniques are used extensively in modern research and development, and diagnostics. This hands-on training course is intended for the SC community researchers who are seeking basic and advanced-level molecular biology training to participate in molecular biology-related and biotechnological research, supervision. This training will help to fill a skill gap between college and employment and those seeking new career opportunities in the biotechnology field. This training provides hands-on course in best practices in the standard molecular biology techniques performed in biotechnology laboratories. Participants will acquire and demonstrate laboratory knowledge and skills in Genomic (DNA/RNA isolation, PCR, restriction digest, gel electrophoresis) and Proteomics (protein purification, and quantification), Bioinformatics (genome analysis, primer design, etc.), as well as experimental design and execution. The Tentative Programmatic Content of the event are:

- Standard Operating Procedures for Molecular Biology Laboratory.
- Basic Laboratory Practice: Laboratory Safety, Pipetting and Solution Preparation.
- Nucleic acids Extraction (DNA, RNA) from Cells/ Blood/Tissues/ Embryos.
- Quantification Techniques and Quality Control.
- e-DNA Synthesis, DNA and e-DNA Amplification by Conventional PCR and Real Time PCR.
- Recombinant DNA Techniques (Enzymatic Restriction, Transformation, Molecular Cloning).
- Protein Extraction from Cells/ Blood/ Tissues/ Embryos, and Quantification Techniques.
- Electrophoresis (SDS-PAGE) and Western Blotting.
- Bioinformatics Tools.

For further details, contact Dr. Naresh L Selokar, Scientist, ABTC, ICAR--National Dairy Research Institute (Deemed University), Karnal-132001 (Haryana), E-mail: naresh.selokar@icar.gov.in For updates, log on to: *www.ndri.res.in*

International Conference on Law and Economics

A four-day International Conference on 'Law and Economics' is being virtually organized by the Tamil Nadu National Law University, Tiruchirappalli, Tamil Nadu in association with Indian Association of Law and Economics during November 25-28, 2021. The event invites contributions in all areas of Law and Economics in the form of:

- full length scholarly papers documenting original and substantial research work and
- the original conceptual ideas of exceptional academic quality in form of Essay.

The broad themes of the event are:

Theories and Evidence of Law and Economics

Micro Economics, Macro Economics, Institutional Economics, Public Policy, Behavioural Law and Economics, Experimental Economics, Welfare Economics.

Law and Economics of Private Laws

Contracts and Standard form of Contracts, Tort Law and Product Liability, Forensic Law, Criminal Law, Civil Law, Common Law.

Law and Economics of Public Laws

Constitutional Law, Rigid vs Flexible, Constitutional Erosion, Economics of Constitutionalism, Administrative Law, Election Law.

Law and Finance

Financial Reforms in India, Financial Inclusion, Reserve Bank of India and Monetary Policy, Stock Exchange Regulations and Trading, Bankruptcy including Sovereign Bankruptcy, Tax Laws- Tax Reforms, Tax Evasion, etc., Black Money, Basel and Financial Stability Board norms, WTO and the Financial Services.

Regulation and Business Law

Competition Law and Policy, Consumer Law and Policy, Corporate Law and Corporate Governance, Securities Laws, Regulated Industries, Real Estate, Infrastructure, Energy Sector, etc.,

Economics of Legal Procedure

Legal Systems, Legislative Process-Government Budgeting and Policy Making, Litigation Processes, Civil and Criminal Remedies, Alternative Dispute Resolution, Sectoral Regulators and Conflict, Judicial Decision Making.

Big Data, Technology and AI

Cyber Crimes, Business and Cyber, Machine Learning, Data and Privacy.

Gender Dimensions of Law and Economics

Legal Frameworks and Women's Empowerment in Organised and Unorganised Sectors, Gender Dimensions of Globalisation and Sustainable Development, Socio-economic Costs of Gender Inequality, Domestic Violence, Sexual Harassment, etc.

The Cultural Dimensions of Law and Economics

The Cultural Dimensions of Development, Impact of Cultural Roots on Economic Performance, The Culture of Capital, The Culture of Sustenance, Law and Economics of Caste and Religion.

Law and Economics of Justice and Equality

Efficiency *vs* Equality, Socio-economic Rules and Norms, beyond Welfarism, Economics of Ageing.

Law and Economics: History, Institutions, Public Policies

Legal Origins and Economic Consequences, Legal Sources Education and Methodology, Legal Traditions Transplantations and Mutations, The Historical Process of Institutional Dynamics, History of National/International Institutions and Unification/ Pluralism of Law.

Other Substantive Areas of Law and Economics

Labour-migration and Labour Codes, etc., Energy, Environment, Health and Safety, International Trade, Family and Personal, Refugees and Immigration, Human Rights, Agriculture and Allied sectors, Education.

For further details, contact Convener, Dr. K Thomas Felix, Assistant Professor, Department of Economics, Tamil Nadu National Law University, Tiruchirappalli-620027 (Tamil Nadu), E-mail: *thomasfelix@tnnlu.ac.in.* For updates, log on to*: www.tnnlu.ac.in* ❑

Prof. I. Ramabrahmam Passes Away

Prof. I. Ramabrahmam, Vice Chancellor, Central University of Odisha, Koraput passed away on July 28, 2021 succumbing to lung cancer added with post COVID-19 complications.

An expert in Public Administration and Public Policy, Prof. Ramabrahmam had an illustrious career in various universities in academics and administration. He was senior faculty of the Department of Political Science, School of Social Sciences, University of Hyderabad (UoH) prior to his taking over as Vice Chancellor of Central University of Odisha. He worked in the areas of Governance, Rural Development, Higher Education, and Public Policy with a focus on Education Policy, e-Governance, e-Pathasala initiatives etc. He has prepared more than 100 modules for e-Pathshala and SWAYAM portals in Public Administration. He had been the National Coordinator for Public Administration for ePG Pathshala and MOOCs in Public Administration.

In addition to his professional identity, Prof Ramabrahmam will be remembered as a fine and kind gentleman who was always full of energy but down to earth at the same time. His ideas and strategies exemplified innovative thinking and excellence across many issues in the area of higher education.

His untimely demise is a great loss not only to his family and the University but also for the whole Higher Education System of the country.

AIU fraternity expresses profound grief on his demise.

COMMUNICATION

What Makes a Good Teacher?

Kamlesh Patel

What Makes a Good Teacher? is the second part of the Communication Series on 'An Ideal Education'. It is an excerpt prepared from the talk given by Shri Kamlesh D Patel 'Daaji' on 'Ideal Education' at the inaugural function during launch of the Heartful Campus Programme at the Education Conclave organized by Heartfulness Institute on 12 January, 2021. The first part 'Meaning of Education' was published in University News, 59 (25) June 21-27, 2021. Shri Kamlesh D Patel 'Daaji' is the Global Guide of Heartfulness. Further information can be accessed from www. heartfullness.org, E-mail: info@ heartfulness.org

I am very happy to announce the first Heartfulness Educator Awards in a year when teachers and professors have bravely faced the pandemic to keep teaching from home, remotely. The psychology of rewards is an extraordinary way to bring our best values into the forefront. In a word, as teachers are the ones who most influence our behaviour, for them to be given due appreciation for their dedication to the most important aspect of education is vital if our society is to evolve towards a better future. The current degradation of our collective consciousness is palpable – we make stars of those who rise to fame and glory with material gain, fame, fortune and competitive behaviour. Do you remember with love and respect your favourite teachers from school? It moves us deeply to remember fondly those great souls who made a difference in our lives, no matter what our age.

A good teacher has always been able to inspire in us the need to be a better human being. Their importance can never be underestimated. It is not the academic knowledge they teach, but how they teach that moves us the most. It is their consideration and capacity to pay attention to us, and the quality of that attention that matter in the long run. Their capacity to love their students and be concerned for their future is the hallmark of a good teacher. That is the reason we have initiated the Heartfulness Educator Awards, which will uphold the highest values of what makes a good teacher, professor, educator, or youth, who is a role model for bringing out the best in the students.

If we learn how to reward and reinforce positive behaviour, it will be an upward spiral. If we learn the art of empathy – how to cultivate the inner spiritual condition, and the resulting emotional state that is meditative – we will create a cultural empathy which will encourage the best potential of our youth to thrive and flower. The Heartful Professor award, the Heartful Educator award and the Heartful Youth award will every year honour individuals who have blazed a trail of love, empathy, concern, and care in their work and on their campuses. I invite you all, meanwhile, to honour and bring this ancient tradition of teacher and student, *acharya* and *sishya*, back to the lives of our children and youth, our societies, and our homes. Our youth will be the better for it.

When I started Heartfulness meditation as a student, I found it to be a blessing. With less exertion, I could study better, grasp concepts and ideas well in class, and absorb whatever was taught immediately. In my professional career and business, also, meditation kept guiding me what to do and what not to do. It helped in every facet of existence. That is why Lord Krishna praised Yoga so much, saying, "Y*ogaha karmashu kaushalam."* By Yoga, please don't think he meant only *Asanas* and *Pranayama*. Yoga is the complete package of *Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana* and *Samadhi*.

The immediate result of meditation is that your mental faculties will skyrocket. Your discriminative faculty improves, and suddenly you become insightful and intuitive, so that nothing escapes your mind, especially what not to do. So, on this occasion of revered Swami Vivekananda's birth anniversary, I invite you to try this meditation, practise it, and see how it revolutionizes your life.

Once you embrace the practices, you will embark upon a lifelong saga of continuous improvement.

What happens when you learn to meditate? Try it and see for yourselves when you do even 10 to 15 minutes every day. Heartfulness Meditation involves the flow of *pranahuti*, and that changes the equation by shifting your consciousness. It is your consciousness that needs to shift if you are to transform yourself. A positive shift means making better and better decisions in life. No one can teach you how to face every situation you will encounter in life, but when you meditate you will be able to tackle day-to-day issues through the inspiration that arises from your heart.

You will become more aware of what is happening within you. You will perceive more each day, and as you begin to experience stillness and peace, harmony will start to manifest in your life. Instead of dissipating all your energies outward, once each energy centre or chakra is awakened within, you will radiate energy carrying specific information and intention with it. Once your inner journey begins from the heart chakra, you have the possibility of becoming truly human, by developing mastery over the heart-based qualities of contentment, calmness, compassion, courage and clarity of thinking. Once you attain mastery over these human qualities, you can then transcend the human limitations and enter higher realms of consciousness. You may even reach the state where you can see the origin of the universe itself. As teachers, you can then share this ancient knowledge. Many people have not heard of these things, and do not know that it is possible to experience them so simply in daily life.

What happens when we choose not to adopt these practices? If we choose to remain trapped in negative patterns of anger, fear, irritation, and anxiety, what will happen to the overall aura that surrounds us? Not only do we carry that baggage, but we also affect others. Take the example of pregnant women: How does peaceful positive energy affect the growth of the foetus?

These meditative practices embellish humanity, because mothers-to-be can influence the destiny of the babies they are carrying by their own behaviour, by their own lifestyle, by their own thought process, and by their own attitudes. We regulate these attitudes simply by going inwards and meditating on the heart chakra with *pranahuti.*

It is experience that teaches us, so please try these practices for yourselves. Use your heart as a laboratory. You are the scientist, you are the result of your scientific experiment, and you are the product of your own research. I urge you all to inculcate such an attitude – don't believe something just because someone tells you to. For example, the great Swami Vivekananda had the unsolved puzzle of whether or not God exists until he met Swami Ramakrishna Paramahansa, at whose feet he experienced God. Until then, he would say, "Show me God, and then I will believe." There is nothing wrong with such an approach. When you have the experience, you no longer need to believe because you feel in your heart, "Yes, I am experiencing godliness."

Now, how will you experience godliness unless and until you become calm enough to resonate with that frequency? If God has to speak to, will you be able to listen if you are busy reciting mantras or breathing heavily in *Pranayama* and twisting all your organs in *Asanas*? *Asanas* and *Pranayama* are mainly for health, not for God-Realization. You may become physically strong, but physical strength without moral strength will become your enemy. Moral strength develops through meditation. It helps you to focus the mind, and through a focused mind you will become more contemplative. Through this contemplative mind you will develop harmony, and through harmony you find peace. When you become peaceful inside, you become more creative.

Think about the great research done by Einstein, Newton, Archimedes, Kekulé, Madam Curie, and others, who changed the course of our scientific understanding. How did they do it? All of them came up with their innovative ideas while relaxing in very normal situations. Archimedes was given the task of discovering whether or not there were impurities in a gold crown, and while taking a bath the answer came and he established the laws of displacement. Similarly, the image of the molecular structure of benzene showed up when Kekulé's was daydreaming. He discovered the ring shape of the benzene molecules while daydreaming about a snake seizing its own tail, the ancient symbol known as the ouroboros. It must have been lurking in his unconscious mind, and due to his profoundly relaxed state when the brainwaves were of a lower frequency, the insight came.

How many of us panic and forget our lessons when going to sit for an exam? It is because we shut off the parasympathetic system in the moment of panic. The parasympathetic nervous system stimulates the parts of the brain that support thinking, logic, creativity and memory. The neural connections and pathways are reinforced in our bodies and brains when the heart is at ease, as the right biochemistry is present. The heart is so important – not only the physical heart but also the emotional heart. The physical, emotional and spiritual all resonate.

Another aspect of Heartfulness is the removal of mental complexities and prejudices. Heartfulness offers a special method called Cleaning to help us to remove our own past accumulated karma. There is a story about Duryodhana, where he pleaded with Lord Krishna, "Krishna, don't misunderstand me, everything you have said is well understood by me. I know what my problem is, I know what I need to do also, but I am helpless, I can't help myself." So, he knew what was right, but he was helpless to follow the right path, he lacked conviction, and he lacked courage to do what was right. The word 'courage' comes from the French *'coeur',* meaning heart. So courage is always emanating from the heart, and we tap into it by removing fear, jealousy, prejudice and other limiting emotions.

Many of you may like to meditate in the mornings, but you are too sleepy. If you want to be fresh and energetic in the mornings, you first need to regulate your sleep cycles, your circadian rhythms. In order to sleep well, without carrying undue tension, fear or stress, you need to clean your psyche, your emotions, and release the heaviness before going to bed. For this, the Cleaning process is very effective.

These simple practices will transform your life. They will help you to become the type of teacher or student who is remembered for their human qualities, for the happiness they radiate wherever they go, and for the positive influence they bring to every situation.

❑

We Congratulate.....

Dr. Rajendra Amulakhbhai Khimani for taking over as the Vice Chancellor, Gujarat Vidyapith, Ahmedabad, Gujarat with effect from June 29, 2021.

Prof Hari Bahadur Srivastava for taking over as the Vice Chancellor, Sidharth University, Kapilvastu, Uttar Pradesh with effect from July 01, 2021.

Prof. Alok Kumar Rai for taking over as the Vice Chancellor, Dr. Bhim Rao Ambedkar University, Agra, Uttar Pradesh with effect from July 05, 2021.

Dr. V N Magare for taking over as the Vice Chancellor, Pravara Institute of Medical Sciences (Deemed-to-be University), Loni, Ahmednagar, Maharashtra with effect from July 05, 2021.

Prof. (Dr.) R S Mudhol for taking over as the Vice Chancellor, BLDE (Deemed-to-be University), Vijayapura, Karnataka with effect from July 12, 2021.

THESES OF THE MONTH

SOCIAL SCIENCES
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of May-June, 2021)

Anthropology

1. Debnath, Sampriti. **Child, maternal body composition and nutritional status among the Bengali Muslim population of Darjeeling District, West Bengal**. (Prof. Jaydip Sen), Department of Anthropology, University of North Bengal, Darjeeling.

Commerce

1. Bhandari, Bharatkumar Bhagwandas. **Performance evaluation of selected equity mutual funds in India**. (Dr. Aaishwarya Kulkarni), Department of Commerce, Veer Narmad South Gujarat University, Surat.

2. Bharmal, Rasida Taiyabali. **A study on perceptions and practices of Islamic banking and performance evaluation of selected Islamic banks**. (Dr. Ramesh A Dangar), Department of Commerce, Saurashtra University, Rajkot.

3. Das, Raju. **Evaluation of credit guarantee scheme for micro and small enterprises in Assam**. (Prof.N M Panda), Department of Commerce, North Eastern Hill University, Shillong.

4. Desai, Dhruti Dipesh. **Analysis of performance management systems in public sector banks in India**. (Dr. Aaishwarya Kulakarni), Department of Commerce, Veer Narmad South Gujarat University, Surat.

5. Kalluri, Satyanarayana. **Rural financial inclusion in Andhra Pradesh: A study with reference to customer experience program of SBI**. (Prof. G V Chalam), Department of Commerce and Business Administration, Acharya Nagarjuna University, Nagarjuna Nagar.

6. Khemka, Ashokbhai Kalpit. **A study of mergers and acquisitions in Indian banking sector and its impact on the operating performance and shareholders wealth**. (Dr. Aaishwarya Kulkarni), Department of Commerce, Veer Narmad South Gujarat University, Surat.

7. Kishore, Prabhala. **An impact of mobile usage in digital marketing with select customers of engineering and management students in CRDA Area, AP**. (Prof.T Umamaheshwara Rao), Department of Commerce and Business Administration, Acharya Nagarjuna University, Nagarjuna Nagar.

8. Madhusri, G. **Role of Stree Nidhi in empowerment of SHG women members through its credit scheme: A case study in Krishna and Guntur District, Andhra Pradesh**. (Dr. Rajesh C Jampala), Department of Commerce & Management Studies, Acharya Nagarjuna University, Nagarjuna Nagar.

9. Malvi, Priyanka. **Chindwara Jila ke chayenit vikaskhand mein anusuchit janatiyoan ke arthik vikas mein Agrani Bank kee rin yojnaoan ka prabhav**. (Dr. Aaditye Lunavat and Dr. Vishal Purohit), Department of Commerce, Dr B R Ambedkar University of Social Sciences, Indore.

10. Parmar, Karan Nandlal. **A comparative study of case management practices of Indian corporate sector: Analysis of selected companies**. (Dr. Manish B Raval), Department of Commerce, Saurashtra University, Rajkot.

11. Patel, Prashant Prahladbhai. **EVA vs traditional performance measures: A study of listed public and private sector banks on BSE**. (Dr. Martina R Noronha), Department of Commerce, Veer Narmad South Gujarat University, Surat.

12. Rathod, Manojkumar Thakorbhai. **A comparative study of non-performance assets of selected public sector banks in India**. (Dr. Anita Rana), Department of Commerce, Veer Narmad South Gujarat University, Surat.

13. Ravaliya, Shitalben Khimabhai. **An analytical study of performance of various plans of public and private life insurance companies in India**. (Dr. M V Dave), Department of Commerce, Saurashtra University, Rajkot.

14. Salunke, Sunita Saumitra. **A study of potential management in selected IT companies of Mumbai Metropolitan Region**. (Prof. Sunita Sharma), Department of Commerce, S.N.D.T. Women's University, Mumbai.

15. Sharma, Akhil. **Dynamics of crude oil prices and exchange rate: An empirical evidence from Indian perspective**. (Prof. Sanjib Gupta), Department of Commerce & Management Studies, Central University of Himachal Pradesh, Kangra.

16. Singumahanthi, Venkata Gayatri Apoorva. **A study on predicaments of online trading and suggestions for betterment**. (Prof. V Chandra Sekhara Rao), Department of Commerce and Business Administration, Acharya Nagarjuna University, Nagarjuna Nagar.

17. Sutariya, Rutulkumar Trikambhai. **A comparative study of socio-economic condition of diamond brokers: A study restricted to Surat and Ahmedabad City**. (Dr. A K Chakrawal), Department of Commerce, Saurashtra University, Rajkot.

18. Vagadiya, Ashish Becharbhai. **The study of voluntary organizations working in the field of consumer protection**. (Dr. R G Bhuva), Department of Commerce, Saurashtra University, Rajkot.

Defence Studies

1. Ravinder Kumar. **India-China strategic relations and its impact on India's security**. (Dr. Rajender Singh Siwach), Department of Defence and Strategic Studies, Maharshi Dayanand University, Rohtak.

Economics

1. Basumatary, Nicodim. **Economic development and governance in Assam: An analysis of Bodoland Territorial Area District**. (Prof. Bhagirathi Panda), Department of Economics, North Eastern Hill University, Shillong.

2. Dkhar, Dahun Shisha. **Public expenditure and private investment in agriculture: A study of production and productivity in Meghalaya**. (Prof. B Mishra), Department of Economics, North Eastern Hill University, Shillong.

3. Joshi, Darshnaben Govindji. **A study of economic dimensions of the quantitative and qualitative aspects of the population growth of Gujarat State from 1961 to 2011**. (Dr. Vibha Bhatt), Department of Economics, Saurashtra University, Rajkot.

4. Raj, Jeevan. **New economic policy and education sector: A study with reference to Dakshin Kannada District**. (Dr. Gaonkar Gopalkrishna M), Faculty of Social Sciences, Kannada University, Hampi, District Bellary.

5. Sathe, Jyoti Vasant. **Maharashtrateel Shetmanjuranchya arthik va samajik abhyas Solhapur Jilhyanchya sandarbhat**. (Dr. Subhash Patil), Department of Economics, S.N.D.T. Women's University, Mumbai.

6. Shafuda, Christopher P P. **Changes in public policy instruments and economic development in Namibia: An econometric analysis**. (Prof. Utpal Kumar De), Department of Economics, North Eastern Hill University, Shillong.

Education

1. Asia. **Impact of achievement motivation and adjustment factors on academic achievement of physically challenged students**. (Dr. J R Priyadarsini), Department of Education, Acharya Nagarjuna University, Nagarjuna Nagar.

2. Chandna, Seema. **Academic stress of senior secondary school students in relation to their locus of control, educational aspirations and socio-economic states**. (Dr. Jitender Kumar), Department of Education, Maharshi Dayanand University, Rohtak.

3. Chaudhari, Sarla U. **A study of effect of relaxation techniques on the self regulation and mental health of standard XI students**. (Dr. Rupam Upadhyaya), Department of Education, Children's University, Gandhinagar.

4. Garasiya, Mahendrakumar, Badjibhai. **A study of an awareness about the climate change: A globally problem of primary teachers in Rajkot District**. (Dr. Mukeshbhai Tandel), Department of Education, Saurashtra University, Rajkot.

5. Gonarkar, Chitrarekha Narayanrao. **Aurangabad Jilhyateel shaley istrawareel varsa shikshan: Ek abhyas**. (Dr. Baviskar C R), Department of Education, Swami Ramanand Teerth Marathwada University, Nanded.

6. Gosai, Monica Himatbhai. **A study of annual workplan and its implementation of District Institute of Education and Training of Gujarat State**. (Dr. Hitesh M Solanki), Department of Education, Saurashtra University, Rajkot.

7. Kishore, Billa Raja Rubi. **Perceptions of volunteer teachers and adult learners about adult education programmes: An empirical study**. (Dr. T Swarupa Rani), Department of Education, Acharya Nagarjuna University, Nagarjuna Nagar.

8. Madan, Nidhi. **A study of job satisfaction of senior secondary school teachers in relation to their personality, sense of humour and technological pedagogical and content knowledge**. (Dr. Umender Malik), Department of Education, Maharshi Dayanand University, Rohtak.

9. Manju. **Mobile Adhigam ka B.Ed priksnarthiyoan kee adhyayan adatoan evam abhivritiyoan par prabhav ka adhyayan**. (Dr. Ashok Kumar Godara), Department of Education, IASE Deemed University,Sardarshahr.

10. Panshikar, Apoorava. **Development of psycho-educational test in Marathi for students in elementary school**. (Prof. Rubina Lal), Department of Special Education, S.N.D.T. Women's University, Mumbai.

11. Parmar, Ankur Karshanbhai. **A study of effectiveness and implication of girls education related schemes of Government of Gujarat**. (Dr. Ketan Gohel), Department of Education, Saurashtra University, Rajkot.

12. Patel, Dipikaben Somabhai. **A study of higher secondary school's (Commerce) of Jamnagar District**. (Dr. S B Barot), Department of Education, Saurashtra University, Rajkot.

13. Saiyed, Saima Sabirhusen. **Effectiveness of Responsive Classroom Approach (RCA) of the upper primary school students**. (Dr. G S Patel), Department of Education, Gujarat University, Ahmedabad.

14. Sarita. **Effectiveness of conventional approach and constructivist and approach on academic achievement and retention of 7th grade students in Science**. (Dr. Hemant Lata Sharma), Department of Education, Maharshi Dayanand University, Rohtak.

15. Tak, Ravisha Dhanraj. **Tamasha kalanvatanchya palyanchya shaikshanik va samajik isthithi abhyas**. (Dr. Meena Kute), Department of Education, S.N.D.T. Women's University, Mumbai.

16. Venkata Siva, Lakshmi G. **A study on cognitive preference styles in Physics and attitude towards Physics of junior intermediate students**. (Dr. G Prabhavathi), Department of Education, Acharya Nagarjuna University, Nagarjuna Nagar.

17. Yadav, Usha. **Mahavir Swami ke darshnik evam shaikshik vicharoan ka vartman shiksha mein upadeyta evam grehniye tatv**. (Prof. Rashmi Mehrotra), Department of Education, Teerthanker Mahaveer University, Moradabad.

18. Zala, Ajay Bhagwatsinh. **E-content development and effectiveness of computer subject in teachers training course**. (Dr. Mukeshbhai Tandel), Department of Education, Saurashtra University, Rajkot.

Home Science

1. Ranch, Bhavna Dwarkadas. **A study on women's awareness related to consumer practices in Jamnagar**. (Dr. Daxaben N Mehta), Department of Home Science, Saurashtra University, Rajkot.

Journalism & Mass Communication

1. John, Ezra. **Cinematic portrayal of development: The thematic representation in Bombay cinema: An analytical study post UN Millennium Declaration, 2000**. (Dr. Harish Kumar), Department of Journalism & Mass Communication, Maharshi Dayanand University, Rohtak.

2. Reeta Kumari. **M-governance and citizen engagement-opportunities and challenges of people's participation: A study of the mobile based services in Shimla District of Himachal Pradesh with special focus on healthcare services**. (Dr. Pradeep Nayar), Department of Journalism & Mass Communication, Central University of Himachal Pradesh, Kangra.

3. Satnam Singh. **Health communication: Current scenario and future prospects: A critical analysis in context of Haryana**. (Dr. Harish Kumar), Department of Journalism & Mass Communication, Maharshi Dayanand University, Rohtak.

Law

1. Anita. **Law relating to reservation policy in India: A critical study**. (Dr. Kavita Dhull), Department of Law, Maharshi Dayanand University, Rohtak.

2. Indu Rani. **Fundamental right of speedy justice and its realisation through eCourts Mission Mode Project in the subordinate judiciary: A critical study**. (Dr. V Visalakshi), Department of Law, Dr. Ram Manohar Lohiya National Law University, Lucknow.

3. Jyoti. **Concept of victim compensation in India: A study of legislative and judicial trends**. (Dr. Anupam Kurlwal), Department of Law, Maharshi Dayanand University, Rohtak.

4. Jyoti. **Different personal laws in India: A need for Uniform Civil Code**. (Dr. Anil Balhara), Department of Laws, Bhagat Phool Singh Mahila Vishwavidyalaya, Khanpur Kalan.

5. Kalani, Suman. **Online dispute resolution mechanism in India: A study of its acceptability, applicability and feasibility**. (Dr. Kiran Sharma), Department of Law, S.N.D.T. Women's University, Mumbai.

6. Nagpal, Kritika. **International developments in geographical indications: Issues and challenges**. (Dr. Neelam Kadyan), Department of Law, Maharshi Dayanand University, Rohtak.

7. Nisha. **Juvenile delinquency: A socio legal study in Chandigarh (UT)**. (Dr. Rajesh Hooda), Department of Laws, Bhagat Phool Singh Mahila Vishwavidyalaya, Khanpur Kalan.

8. Rajendran, Thiru Kumar. **Criminaliisation of politics in India: A critical study**. (Dr. S K Asok Kumar and Dr. R Haritha Devi), Department of Interdisciplinary Studies, The Tamil Nadu Dr Ambedkar Law University, Chennai.

9. Verma, Anjali. **Menace of pornography in India: A socio-legal study with special reference to cyber law**. (Dr. Jaswant Saini), Department of Law, Maharshi Dayanand University, Rohtak.

10. Yadav, Kusum. **Prevention and control of industrial pollution in India**. (Dr. Jitender Singh Dhull), Department of Law, Maharshi Dayanand University, Rohtak.

Library & Information Science

1. Dharmaraj, Veer Chaitanya. **Mapping of research productivity of scientist in IIT's in India: A scientometric study**. (Dr. J N Kulkarni), Department of Library and Information Science, Swami Ramanand Teerth Marathwada University, Nanded.

Management

1. Chavda, Nagji Ukabhai. **A statistical analysis of NSE-CNX banks financial performance using weighted camels model**. (Dr. P K Trivedi), Department of Management, Saurashtra University, Rajkot.

2. Chouksey, Pooja. **A study of consumer perception towards eco-friendly FMCG products in Madhya Pradesh with special reference to Indore City**. (Dr. Rakesh Chouhan), Department of Management, Dr. A.P.J Abdul Kalam University, Indore.

3. Deepthi, S. **Assessment of training and development at Visakhapatnam Steel Plant, Visakhapatnam**. (Dr. S Mohammad Ghous and Dr. T Narayana Reddy), Department of Management, Jawaharlal Nehru Technological University Anantapur, Ananthapuramu.

4. Goel, Sonam. **An empirical study on the behavioral intention and customer perception for branded cosmetic products**. (Dr. Anupam Sharma), Department of Management Studies, Maharishi Markandeshwar University, Ambala.

5. Kulkarni, Sonam. **Innovativeness: A study of openness of consumer towards new products with special**

reference to FMCG sector. (Dr. Rakesh Chouhan), Department of Management, Dr. A.P.J Abdul Kalam University, Indore.

6. Lakhani, Mehrunisha Yusufali. **A study of occupational stress among teachers**. (Dr. Kiran Pandya), Department of Human Resource Development, Veer Narmad South Gujarat University, Surat.

7. Nanda, M P. **Comparative study of performance indicators before and after CMMI accreditation in IT services landscape**. (Dr. Sriram Kothapalli), School of Management, CMR University, Bangalore.

8. Shaikh, Javedbhai Mahmadsafibhai. **A consumer perceived, consumer based food brand equity scale: Conceptualization and marketing implications**. (Dr. Paresh M Kariya), Department of Management, Gujarat University, Ahmedabad.

9. Tiwari, Raman. **Modelling of sales forecasting, segmentation and customer loyalty in e-commerce**. (Dr. Rajat Gera and Dr. Smriti Srivastava), Department of Management, Manav Rachna University, Faridabad.

10. Vinay, R. **A study on leadership styles of principles and organizational commitment of teachers in secondary schools of Bengaluru City**. (Dr. E Eswara Reddy), School of Management, CMR University, Bangalore.

Physical Education & Sports

1. Bapatla, Shanthi Kiran. **Effect of breathing exercise and mental training on selected psychological and performance variables among Kabaddi players**. (Dr. P P S Paul), Department of Physical Education and Sports, Acharya Nagarjuna University, Nagarjuna Nagar.

2. Bhardwaj, Anjali. **Utility and relecance of spiritual biodiversity in yogic environment: A descriptive study**. (Dr. Asim Kulshrestha), Department of Yoga, Dev Sanskriti Vishwavidyalaya, Haridwar.

3. Desai, Rutesh Rameshchandra. **Attitude of rural and urban college female students towards physical education and sports**. (Dr. C B Kagathara), Department of Physical Education, Veer Narmad South Gujarat University, Surat.

4. Dhimmar, Hetalben Dahyabhai,. **A comparative study of personality, anxiety and adjustment among athletes and non-athletes students**. (Dr. C B Kagathara), Department of Physical Education, Veer Narmad South Gujarat University, Surat.

5. Edukondalu, Tadivalasa. **Effect of various muscle specific resistance training on selected physical physiological psychomotor and psychological variables among inter-collegiate hockey players**. (Dr. P Johnson), Department of Physical Education, Yoga and Sports, Acharya Nagarjuna University, Nagarjuna Nagar.

6. Jora, Hiteshkumar Bhaya. **A comparative study of physical fitness and adjustment of players of individual games and team game**. (Dr. Punit V Teraiya), Department of Physical Education and Sports, Saurashtra University, Rajkot.

7. Joshi, Heliben Prashantbhai. **Effect of swimming training programme on selected physical and physiological variables on swimmers**. (Dr. D B Desai), Department of Physical Education, Gujarat University, Ahmedabad.

8. Lohith, Y. **Efficacy of plyometric training on aqua, land and sand surfaces**. (Dr. S M Prakash), Department of Physical Education, Kuvempu University, Shankaraghatta.

9. Mandava, Koteswara Rao. **Effect of resistance and sand training on selected performance variables among inter collegiate kabbadi players**. (Dr. P P S Paul Kumar), Department of Physical Education, Yoga and Sports Sciences, Acharya Nagarjuna University, Nagarjuna Nagar.

10. Mandeep Singh. **A case study of Judoka Yashpal Solanki: An Arjuna Awardee**. (Dr. Rajender Prasad Garg), Department of Physical Education, Maharshi Dayanand University, Rohtak.

11. Patel, Mitulkumar Parbhubhai. **Relationship between selected physical fitness components and skill performance of volleyball players**. (Dr. C B Kagathara), Department of Physical Education, Veer Narmad South Gujarat University, Surat.

12. Prasad, Potluri V K D. **Determination of athletic ability from selected anthropometric, physical and physiological variables of school boys**. (Dr. P P S Paul Kumar), Department of Physical Education, Yoga and Sports, Acharya Nagarjuna University, Nagarjuna Nagar.

13. Reddy, Savanam U B. **Effect of Gymnastics and yoga training on selected health related physical fitness components, physiological and body composition variables among school boys**. (Prof. Y Kishore), Department of Physical Education, Yoga and Sports Sciences, Acharya Nagarjuna University, Nagarjuna Nagar.

14. Shaik, Fayaz. **Effect of general specific and combined fitness training on selected motor fitness and skill related fitness among football players**. (Dr. P Johnson), Department of Physical Education, Yoga and Sports Sciences, Acharya Nagarjuna University, Nagarjuna Nagar.

15. Songa, Dileep Kumar. **Construction of physical fitness norms foe girl students of social welfare schools in Andhra Pradesh**. (Prof. Y Kishore), Department of Physical Education and Sports, Acharya Nagarjuna University, Nagarjuna Nagar.

Political Science

1. Lalhmingliana, C. **Zo unification movement in India, Bangladesh and Myanmar**. (Prof. Jangkhongam Doungel), Department of Political Science, Mizoram University, Aizawl.

2. Robinson, K. **Sino-Indian relations: A study of maritime security**. (Dr. Suparna Bhattacharjee), Department of Political Science, North Eastern Hill University, Shillong.

3. Yanthan, Mhonthung. **Political attitudes and political participation of students in higher educational institutions in Nagaland**. (Prof.H Srikanth), Department of Political Science, North Eastern Hill University, Shillong.

Psychology

1. Ajay Kumar. **Perceived stress, coping strategies and mental health of in-service and retired persons**. (Dr. Sarvdeep Kohli), Department of Psychology, Maharshi Dayanand University, Rohtak.

2. Jatin, Sapna Ashokkumar. **Relationship between self efficacy and self esteem on the general well being of the adolescents**. (Dr. Trusha R Desai), Department of Psychology, Gujarat University, Ahmedabad.

3. Kalpana Devi. **Cognitive monitoring: Role of personality and mindfulness**. (Dr. Nov Rattan Sharma), Department of Psychology, Maharshi Dayanand University, Rohtak.

4. Poonam Devi. **Standardization of perceived parental involvement scale**. (Dr. Madhu Anand), Department of Psychology, Maharshi Dayanand University, Rohtak.

5. Rajiv Kumar. **Self-efficacy, hope resilience and coping as preditors of post-traumatic growth among widows**. (Dr. Punam Midha), Department of Psychology, Maharshi Dayanand University, Rohtak.

6. Raval, Pushpa V. **Psychological wellbeing, mental health and family adjustment of pregnant women in the context of involvement in Tapovan Research Centers of Children's University**. (Dr. A N Prajapati), Department of Psychology, Children's University, Gandhinagar.

7. Sharma, Archana. **Effect of social media on the development of psychological problems among adolescents and young adults**. (Dr. Santosh Kumar Vishvakarma), Department of Psychology, Dev Sanskriti Vishwavidyalaya, Haridwar.

8. Suman Kumari. **Revolving door phenomenon among severe psychiatric patients: A psychosocial study**. (Dr. Arunima Gupta), Department of Psychology, Maharshi Dayanand University, Rohtak.

Public Administration

1. Malluri, Srinivasarao. **Women empowerment through self-help groups: A case study of Guntur District in Andhra Pradesh**. (Dr. B Udaya Prakash), Department of Public Administration, Acharya Nagarjuna University, Nagarjuna Nagar.

Social Work

1. Allam, Nirmala Meri. **A study on women trafficking in Guntur District of Andhra Pradesh**. (Dr. R Srinivasu), Department of Social Work, Acharya Nagarjuna University, Nagarjuna Nagar.

Sociology

1. Adapa, Satheesh Kumar. **A comparative study on the needs and problems of elderly people living in old age homes and in the community-need for new initiatives**. (Dr. V Venkateswarlu), Department of Sociology, Acharya Nagarjuna University, Nagarjuna Nagar.

2. Hlondo, Lalmalsawmi. **Marrige in Mizo society: A sociological study of the Lusei and Mara**. (Dr. Rekha M Shangpliang), Department of Sociology, North Eastern Hill University, Shillong.

3. Muwel, Santoshi. **Anusuchit janjati ke garibi unmulan mein gramin vikas karyekramoan kee bhumika: Ek samajshastriye adhyayan: Madhya Pradesh ke Alirajpur Jile ke vishesh sandarbh mein**. (Dr. Dhanraj Dongre), Department of Sociology, Dr B R Ambedkar University of Social Sciences, Indore.

Tourism & Hospitality Services

1. Bhardwaj, Ajay. **Role of Adarsh Gram Yojna in promoting sustainable development of rural tourism in India: Concept and applications**. (Dr. Umakant Indolia), Department of Tourism Management, Dev Sanskriti Vishwavidyalaya, Haridwar.

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Deendayal Integrated School Complex, Cujira, Bambolim, Goa 403202
Tel: 0832 – 2976649
Email: principal@dempocollege.edu.in
Website: www.dempocollege.edu.in

Applications are invited from Indian Nationals, domiciled in Goa for the following posts for the B. Com program (aided) of this college:

Sr. No.	Vacancy FULL TIME REGULAR	Post/Category
1	Assistant Professor in Economics	1 Full Time – OBC
2.	Assistant Professor in Commerce	2 Full Time – 1 OBC, 1 EWS

For details regarding the posts, minimum qualifications, eligibility criteria, etc., visit College **Website: www.dempocollege.edu.in**

Dr. Radhika S. Nayak
Professor & Principal

Shikshan Prasarak Mandal Akluj, Sanchalit Mahatma Phule College of Education, Akluj

Tal. Malshiras Dist. Solapur (02185-223408, 226433)
Email - mpceakluj@gmail.com
(Affilaited to P.A.H. Solapur University, Solapur)
(Permanent Non-Grant Basis)

W A N T E D

Applications are invited from eligible candidates for the following Permanent Non-Grant Basis posts.

Sr. No.	Designation	Total Vacant	Open post	Reserved Category post
1	**Principal**	1 Full time	1	Open to All

1 Educational Qualification, Experience, Pay Scale, etc. applicable for the post is as per norm specified by UGC, Govt. of Maharashtra and Solapur University, Solapur & as modified from to time.
2 Candidates should submit their API (Academic Research Score) report with related documents. (Only for the post of Principal)
3 Reserved Category candidates, who are domiciled outside of Maharashtra State will be treated as open category candidates.
4 Reserved candidates are advised to send a copy of their application to the Teacher Approval Section, PAH Solapur University, Solapur.
5 Application received after the last will not considered. The College will not be responsible for postal delay, if any.
6 Those who in service should apply through proper channel.
7 Incomplete application will not be entertained.
8 T.A., D.A. will not be paid for attending the interview.
9 Apply giving full particulars **within 30 days** from the date of publication on this advertisement to the undersigned. Apply on plane paper.

Place: Akluj
Date : 20/4/2021

President
Shikshan Prasarak Mandal, Akluj

Jalna Education Society's

R. G. Bagdia Arts, S. B. Lakhotia Commerce &
R. Bezonji Science College, Jalna - 431203 (Maharashtra)
NAAC Accredited with 'B' Grade, ISO 9001:2015 Certified
(Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.)

WANTED

Applications are invited from eligible candidates for the post of **Assistant Professor** on Contract Basis.

Sr. No.	Course	Total No. of Posts	Open Post	Reserve Post	Remark
01	B.Com.	02	01	SC-01	Non- Grantable
02	B.C.A.	02	01	SC-01	Non- Grantable
03	M.Com.	04	01	SC-01, NT-B & C-01, OBC-01	Non- Grantable
04	M.Sc. (Chemistry)	02	01	SC-01	Non- Grantable
05	M.Sc. (Botany)	02	01	SC-01	Non- Grantable
06	M.A. Economics	02	01	SC-01	Non- Grantable
07	B.Voc. Industrial Automation	02	01	SC-01	Non- Grantable
08	Performing Folk Arts (Degree Course)	01	01	--	Bachelor of Vocation (B.Voc.) Programme under NSQF / Remuneration as per UGC
09	Professional Accounting and Taxation (Degree Course)	01	01	--	
10	Agri. Commodity Quality Assayer (Diploma Course)	01	01	--	
11	Fashion Designing (Diploma Course)	01	01	--	

The application should reach the Principal **within 10 days** from the date of publication. Educational Qualification, Terms & Conditions as per UGC, Government of Maharashtra & Dr. Babasaheb Ambedkar Marathwada University, Aurangabad rules. No TA/DA will be paid for attending interview.

Note : *For detail information about posts, qualifications and other terms and conditions (Including mentioned in Scheduled 'B', Dr. B. A. M. University, Aurangabad) or please visit College website :* ***www.jesjalna.org***

P. R. BAGDIA
CHARIMAN

S. G. BHAKKAD
SECRETARY

DR. S. B. BAJAJ
I/C. PRINCIPAL

GOVERNMENT OF INDIA

Ministry of Education
Department of Higher Education Technical Section - I

INVITATION OF APPLICATIONS FOR THE POST OF DIRECTOR, IIT ROORKEE

Applications are invited for appointment to the post of Director of Indian Institute of Technology (IIT) Roorkee. The Director of an IIT is the academic and administrative head of the Institution. He/she is expected to have a minimum ot 5 years' administrative experience and leadership qualities to head an Institute of National importance. The candidate/person should be a Ph.D. with first class or equivalent at the preceding degree, preferably in a branch of Engineering. In exceptional cases, candidates with Science, Mathematics or Management degrees may be considered. He/she should have an outstanding academic record throughout and a minimum of 10 years teaching experience as a Professor in a reputed Engineering or Technology Institute or University and should have guided Ph.D. students. The applicant should preferably be less than 60 years of age on the last date of receipt of the applications. The post carries a fixed pay of Rs. 2,25,000/- (Revised) per month, with allowances as per rules

2. Interested individuals may apply giving their detailed resume in the prescribed format clearly bringing out research, teaching, industry-academia collaborations and administrative achievements, alongwith a two-page justification in support, of their candidature, a two-page vision statement for the institution and contact details of at least two distinguished individuals well acquainted with their work. The application typed in the prescribed format along with enclosures may be sent by Registered/Speed Post to **The Under Secretary (TS.1), Department of Higher Education, Ministry of Education, Room No. 428 "C" Wing, Shastri Bhawan, New Delhi -110001 so as to reach the Ministry on or before 7th September, 2021.** The detailed advertisement and the format of application is available on the website **(www.education.gov.in)**

SUN PHARMA
SCIENCE FOUNDATION

INVITATION FOR NOMINATIONS

SUN PHARMA SCIENCE FOUNDATION RESEARCH AWARDS-2021

&

SUN PHARMA SCIENCE FOUNDATION SCIENCE SCHOLAR AWARDS-2021

We invite Heads of Research Institutions, Universities, Medical and Pharmaceutical Colleges of India to nominate eligible candidates for :

(a) Sun Pharma Science Foundation Research Awards-2021 and
(b) Sun Pharma Science Foundation Science Scholar Awards-2021

The Sun Pharma Science Foundation Research Awards are for excellence in original research in Medical and Pharmaceutical Sciences. There are three Awards of Rs.2,50,000/- (Rupees two lakh fifty thousand) each; two in Medical Sciences – (Basic Research and Clinical Research), and one award in Pharmaceutical Science.

The sponsored work of Indian Scientists, both in India and abroad, together with their bio-data, research achievements, awards received in the past and papers published, along with justification for nomination and citation on the research work, may be submitted online on Sun Pharma Science Foundation's website www.sunpharmasciencefoundation.net

Sun Pharma Science Foundation Science Scholar Awards: There are four awards - two each in Bio-Medical Sciences and Pharmaceutical Sciences for Rs.50,000/- each, and an additional amount of Rs.50,000/- to attend international conference.

Indian nationals under the age of thirty (as on August 01, 2021), who have completed at least 1st year of MD or PhD in Biomedical or Pharmaceutical Sciences are eligible to apply. Those who have completed their MD, or PhD and above the age of thirty, as on date August 01, 2021 are not eligible to apply. The applicant should have completed a Research Project and should be willing to present his/her research work in front of knowledgeable assessors.

The applicants should submit:- (1) detailed CV with photograph (2) copy of their detailed research work (3) letter from the supervisor certifying that the research work under reference has actually been done by the applicant (4) a citation (brief summary) on his/her research work. (5) forwarding letter from the Head of the Department or Institution, giving justification for nominating the applicant (6) A voluntary declaration from the applicant that they would work in the public or private funded academic/research based organizations for a minimum period of two years after completion of his/her studies. The applicant should also submit the following testimonials.

- Aggregate marks obtained in PCB/PCM in Class XII, and Bachelor's/ Master's Degree
- Proof of age
- Copies of the publications, if any
- Merits/Awards/Scholarships received, if any
- A letter stating that the project submitted for the award has received ethical clearance,
- A statement duly signed by the nominee and the supervisor/co-author that the thesis has no-conflict of interest academically or financially.

The applicants should submit their nominations online at Sun Pharma Science Foundation's website www.sunpharmasciencefoundation.net from **August 01, 2021 to September 30, 2021.** Also required to send a print copy of the nomination, to the office of the Foundation **by October 15, 2021.**

Detailed nomination procedures of the awards are available on Sun Pharma Science Foundation's website.

For further information, please contact :

The Office of Sun Pharma Science Foundation
8C, 8th Floor, Hansalaya Building, 15-Barakhamba Road, Connaught Place, New Delhi : 110 001 (India)
Tel.(91-11) 23721414; 23721415 : E-mail : sunpharma.sciencefoundation@sunpharma.com
Website : http://www.sunpharmasciencefoundation.net

PONDA EDUCATION SOCIETY'S

RAVI S. NAIK COLLEGE OF ARTS & SCIENCE

FARMAGUDI, PONDA-GOA- 403 401

Date : 16th July, 2021

APPOINTMENTS

Applications on plain paper are invited from the Indian Citizens for the following **Assistant Professor** posts to be filled in our Under Graduate Grant –in –aid College during the academic year 2020-2021, stating full name, address, e-mail address, age with date of birth, educational qualifications, experience etc. The applications should reach to the undersigned **within 20 days** from publication of this notice. Certified copies of marksheets of all examinations from S.S.C. onwards should be enclosed to the application.

(A) ASSISTANT PROFESSOR (FULL-TIME-REGULAR)

SR. NO.	SUBJECT	Unreserved	ST	SC	PD	Reserved for OBC/ST
1	2	3	4	5	6	7
1.	Assistant Prof. in Chemistry (Organic)	_	_	01	_	_
2.	Assistant Prof. in Chemistry (Organic)	_	_	_	01 (4th time)	_
3.	Assistant Prof. in Chemistry (Physical Chemistry)	01	_	_	_	_
4.	Assistant Prof. in Physics	01	_	_	_	01
5.	Assistant Prof. in Botany	_	_	_	_	01
6.	Assistant Prof. in Marathi	_	_	_	01 (2nd time)	_
7.	Assistant Prof. in Zoology	_	01	_	_	_
8.	Assistant Prof. in Microbiology	01	_	_	_	_
9.	Director of Physical Education	01	_	_	_	_

The above posts will be filled subject to availability of workload and approval of Goa University and NOC from Directorate of Higher Education, Government of Goa.

Mandatory Requirement : 15 years of Residence Certificate in Goa and knowledge of Konkani is essential and knowledge of Marathi is desirable. The valid Residential Certificate is to be enclosed with the application.

Educational Qualifications: (Assistant Professor)

a) Master's Degree with at least 55% marks or equivalent grade B in the UGC 7 point Scale in the appropriate subject and a consistently good academic record.

DIRECTOR OF PHYSICAL EDUCATION:

A Master's Degree in Physical Education and Sports or Physical Education or Sports Science with 55% marks (or an equivalent grade in a point-scale, wherever the grading system is followed).

Record of having represented the University/College at the Inter-University/Inter Collegiate competitions or the State and/or national championship.

Besides fulfilling the above qualifications, the candidate must have cleared the National Eligibility Test(NET), conducted by the UGC or CSIR, or a similar test accredited by the UGC, like SET, who are or have been awarded a Ph.D. Degree in relevant subject/discipline, in accordance with the University Grants Commission (Minimum Standards and Procedures for Award of M.Phil./Ph.D. Degree) Regulations, 2009 or 2016 and their amendments from time to time as the case may be or have been awarded Ph.D. degree from National Institution of Importance.

Pay and allowances for the posts and terms and conditions of service are as laid down by Goa University/ Goa Government and other competent authorities from time to time.

Applicants who are already employed shall forward their application through proper channel and shall account for break, if any, in their academic career.

Candidates from Reserve Category should compulsorily enclose with the application their caste certificate / relevant certificate issued by competent authority.

In case candidates possessing NET/SET qualifications are not available or not found suitable, candidates fulfilling other conditions of minimum qualifications would be considered for appointment on purely temporary basis till the end of the academic year only.

If Reserve Category candidates are not available or not found suitable for the post under Reserve Category, the posts will be filled up by appointing other suitable candidates from open category on purely temporary basis for the academic year only. The candidates so appointed will have no legal right or claim for continuation on the said posts.

Incomplete applications and the applications received after the due date shall be liable for rejection.

(V. J. Pissurlekar)
Principal

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B. DEMAND DRAFT ONLY : Such instrument is required to be prepared be in the name of **"ASSOCIATION OF INDIAN UNIVERSITIES" (payable at New Delhi), preferably from the Nationalised Banks ONLY.**

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