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National Education Policy —2020 and the Framework for Multidisciplinary Education

Anil S Sutar*

The National Education Policy–2020 (NEP 2020) emphasizes more on holistic and multidisciplinary education. The policy not only articulated quite well the need for multidisciplinary education but also provides a robust framework for it. Our university system which has been organized into departments tends to focus more on disciplinary specialization. The ideas of interdisciplinary, multidisciplinary, transdisciplinary learning, research and practice have been expressed without much clarity and without a proper action plan. The approach towards multidisciplinary education so far did not envisage a framework for building it as a permanent feature of higher education. It was meted out a more ad-hoc treatment. Rhetoric expression of the significance of interdisciplinary-multidisciplinary approaches to learning, research and practice has been abundant. But what was missing was the serious effort in implementing the notions of interdisciplinary and multidisciplinary education. The operationalization of multidisciplinary education calls for adjustments at several levels – at the level of disciplines, at the level of teams and at the institutional level. The NEP–2020 provides clarity about multidisciplinary Education and lays down a road map for its implementation in higher education. The literature dealing with multidisciplinary education unravels several issues and problems that have been unaddressed so far being discussed here.

Lack of Conceptual Clarity

There are several interrelated terms such as multidisciplinary, interdisciplinary, transdisciplinary and cross-disciplinary which have been often used interchangeably. Of course, the boundary between these terms is quite thin and most of them involve a similar process of coordination across several disciplinary perspectives. But each of these terms is quite distinct and has its own methodology and epistemology. The interdisciplinary approach aims to integrate perspectives of different disciplines to arrive at a common result whereas the multidisciplinary approach aims toward gaining competencies from different disciplines simultaneously keeping intact the disciplinary boundaries. In this sense, a multidisciplinary approach is more additive in nature than integrating (Klein 1990). The NEP articulates the term multidisciplinary education in a more crystal and precise manner and the policy is quite consistent with the usage of the term multidisciplinary education.

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More as Tokenism

- There is no doubt that departments across the universities emphasize the significance of multidisciplinary and interdisciplinary approaches in education. However, the emphasis appears to be mere tokenism without any action plans proposed for promoting them. As Gelwick R (1983) says the term interdisciplinary has become a slogan, a buzzword, and an axiom but yet there is no clarity of the notion of making it vulnerable to corruption and abuse. The NEP moves toward operational aspects of multidisciplinary research than its rhetorical articulation.

No Institutional Framework

It is found that emphasis on multidisciplinary and interdisciplinary approaches in education is confined to organising seminars and workshops on multidisciplinary themes occasionally without any efforts of building them as an integral part of the education system. The approach was quite ad-hoc in nature and did not contemplate the institutional framework for promoting multidisciplinary education. The efforts in setting up multidisciplinary higher educational institutes, launching multidisciplinary programmes and creating new schools or departments focusing on multidisciplinary education were quite inadequate. The NEP aims to provide a larger institutional framework in terms of new multidisciplinary programmes and multidisciplinary institutes that can effectively offer multidisciplinary education for 21st century realities.

The Vibrant Notion of Multidisciplinary Education

An important contribution of the NEP–2020 is its innovative conceptualization of the term 'multidisciplinary education'. The policy brings forth the distinctiveness of the term 'multidisciplinary' and avoids any possible overlapping with other similar terms such as interdisciplinary, transdisciplinary and cross-disciplinary. Tracing back the historical roots, the policy brings forth the idea of multidisciplinary education which is quite unique and indigenous. What is so special about the notion of multidisciplinary education that the NEP talks about is its originality and holism. India has a rich tradition of multidisciplinary education which is reflected in the fact that ancient Indian literary work *Kadambari* of Banabhatta proclaims that good education is the education of 64 *kalaas* or arts or disciplines. This 64 *kalaas* were not confined to just singing and dancing as it is commonly understood. Indeed, the idea of '64 *kalaas'* is the grand scheme of multidisciplinary education. It is the combination of subjects spreading across liberal arts, scientific disciplines, and professional and vocational courses. It lists out (a) arts such as singing and painting (b) scientific subjects such as chemistry and mathematics and (c) vocational subjects such as carpentry and clothes-making (d) professional subjects such as medicine and engineering and (e) soft skills such as communication, discussion and debate.

Salient Features of Multidisciplinary Education

Salient features of Multidisciplinary Education as envisaged by NEP 2020 are:

- Considering all branches of human creativity such as science, mathematics, vocational and soft skills, arts, etc – disciplines of knowledge that are distinct of Indian origin.

- It is important to recognize soft skills, and vocational subjects on par with medicine and mathematics so that parity can be established among them which paves way for multidisciplinary education.

- The notion of 'knowledge of many arts' as a complete education provides a philosophical foundation for multidisciplinary education.

- The multidisciplinary education that combines liberal arts with hard-core science subjects; the multidisciplinary education that combines professional subjects with vocational courses is the kind of education that is required for the 21st century.

More Nuanced Rationale for Multidisciplinary Education

The problems of modern technology-based society tend to be more complex are multidimensional that require multidisciplinary solutions. Take any of the problems that our society has been facing – climate change, corruption, violence, etc., each one of them is multidimensional and solutions from a single disciplinary perspective are not capable of addressing such problems. Some scholars such as Johnson (1987) argue that a multidisciplinary approach to education and research results in an intellectual synergism that conceives the whole to be greater than the parts. The NEP–2020 has articulated

the rationale and need for multidisciplinary education in the most uncompromising terms.

The multidisciplinary education that combines humanities and arts with Science, Technology, Engineering and Mathematics (STEM) leads to:

- positive learning outcomes including enhanced creativity and innovation, critical thinking, more in-depth learning and mastery of curricula across fields. Ward (1995) asserts that multidisciplinary education makes scholars more creative due to their exposure and ability to draw analogies across different disciplines. Individuals who experience a breadth of diverse disciplines ignite cognitive processes that in turn stimulate creativity.

- *enhanced teamwork and spirit* – that includes enhanced problem–solving abilities, and communication skills. An important aspect of multidisciplinary education is that it equips students with better interpersonal skills. Multidisciplinary education involves a higher degree of coordination which in turn helps in building various networks and support systems across the discipline.

- *engagement and enjoyment of learning*: a positive aspect of multidisciplinary education is it takes care of the problems associated with monotonous learning associated with learning single or a few related subjects. Multidisciplinary education brings in diverse perspectives and new ideas that make learners quite excited. Buffer James (1985) puts forth the view that an influx of new ideas from different disciplines which had otherwise not been taught in a singular subject leads to excitement among the learners.

- *improved and enhanced research skills:* The multidisciplinary education calls for an innovative pedagogy that emphasises more on dialogue and debate, group exercises, learning by doing, and internship with local industry and research agencies. This facilitates the development of research temperament among students. The multidisciplinary pedagogy helps in equipping students with research skills.

- *Increase in Social and Moral Awareness*: Multidisciplinary education has a humanising effect on students. Exposure to themes of ethics, global citizenship education, constitutional morality, and environmental sensitiveness helps in making students morally and socially more awakened. This will have a positive impact on creating a just society with peace and order.

- *Overall Development of Human Beings – Intellectual, Aesthetic, Social, Physical, Emotional and Moral*: Multidisciplinary education touches upon all the important aspects of learners. Multidisciplinary education by way of offering diverse and multiple courses such as sports, crafts, mathematics, philosophy, psychology, and medicine, strives to fulfil the diverse needs and requirements of students.

- *Holistic Education* –Multidisciplinary education strives to achieve the goal of holistic education. Multidisciplinary education aims to widen the horizon and mental outlook of the students. Disciplinary focussed education tends to make the focus of students narrower, but multidisciplinary education broadens the focus of students and helps them use their diverse skills and strengths to analyse a particular issue.

Robust Framework for Multidisciplinary Education

The NEP---2020 comes out with a far-reaching policy framework to build, strengthen and promote multidisciplinary education in higher education in the country. It has suggested a wide variety of measures to make undergraduate programmes including those in technical, professional and vocational disciplines more multidisciplinary. It aims at promoting multidisciplinary education on both sides – the engineering institutes, such as IITs, will move towards more holistic and multidisciplinary education by incorporating more arts and humanities disciplines. Similarly, students of arts and humanities will learn more science and incorporate more vocational and soft-skill courses in their programmes. In this sense, the NEP aims enlightening technocrats with a touch of humanities and social sciences and at the same time empower social science graduates with the provision of vocational and soft-skill courses.

Provision of Flexible and Innovative Curricula

For the realization of multidisciplinary education, the policy advocates for flexible and innovative curricula of all Higher Educational Institutes (HEIs) that include credit-based courses

and projects in diverse areas such as community engagement and service, environmental education and value-based education. The policy particularly emphasizes themes such as climate change, pollution, waste management, conservation of biological diversity and sustainable development under environmental education; humanistic, ethical, constitutional and human values of truth, righteous conduct, peace, love, non-violence, scientific temper, citizenship values for value-based education. The purpose of offering such courses is to promote holistic education among the younger generation and enable them to participate in society as responsible members.

Revamping Undergraduate and Postgraduate Programmes

The policy makes a provision for a 4-year Multidisciplinary Bachelor's programme with an opportunity to study a wide range of multidisciplinary courses in addition to specialization in majors and minors as per the choice of the students. The true spirit of multidisciplinary education is to promote the learning of diverse disciplines without diluting the rigour of the specialization of disciplines. The provision of multiple exit points also facilitates the process of multidisciplinary education to the extent that students are free to choose more and more programmes and get as many degrees, certificates and diplomas as they wish. This enables learners to be more multidisciplinary than focusing on just one discipline.

Multidisciplinary Programmes and Opportunities for Multidisciplinary Work

- The policy aims at building multidisciplinary programmes at grandmaster and doctoral levels at large multidisciplinary universities. The idea of launching full-fledged multidisciplinary graduate, master's and doctoral programmes will revamp higher education. The policy also strives to promote multidisciplinary practices in resolving problems. Promote multidisciplinary practices and emphasise the need for creating opportunities for multidisciplinary work at all levels – academia, government and industry.

Autonomy for Floating Multidisciplinary Courses and Scope for Multidisciplinary Pedagogy

- To offer more courses along with specialized courses, one needs to have the flexibility and autonomy to develop curricula and float new courses. The NEP offers a fair degree of flexibility and autonomy to the faculty members and departments in developing new courses. Similarly, the NEP allows faculty members to design a vibrant pedagogy that caters to the needs of multidisciplinary education. The policy recommends a pedagogy that emphasises on communication, discussion, debate, research, and opportunities for cross-disciplinary and interdisciplinary thinking which is a must for promoting multidisciplinary education.

- ### Setting up of Departments to Promote Multidisciplinary Education

The NEP identifies certain departments such as Languages, Literature, Music, Philosophy, Indology, Art, Dance, Sociology, Sports etc., for promoting multidisciplinary learning. Accordingly, it recommends for setting up of such departments in all Higher Educational Institutes (HEIs). The provision of setting up departments of liberal arts, humanities and social sciences indeed helps in the holistic education of learners.

- ### Provision of 'Multidisciplinary Education and Research Universities (MERUs)

The remarkable recommendation of the policy is to build an institutional framework for promoting multidisciplinary education. Apart from, the provision of offering diverse and multiple courses, the policy recommends for setting up of 'Multidisciplinary Universities' which it calls 'Multidisciplinary Education and Research Universities'. It proposed that the MERUs will provide a vibrant multidisciplinary education that is needed for the requirement of the 21st century. The policy envisages a dynamic role for MERUs and expects that they will emerge as centres of excellence on par with IITs.

Thus, NEP provides a robust framework for promoting multidisciplinary education. It envisages – (a) launching of innovative courses having multidisciplinary perspectives such as 'environmental conservation', 'sustainable development, and (b) multidisciplinary programmes – that combine diverse disciplines in an integrated manner without losing rigour of disciplinary specialization. The NEP provides for multidisciplinary programmes at all levels of learning in multidisciplinary universities – graduate programmes, master's programmes and doctoral programmes. (c) the departments that are

crucial for promoting multidisciplinary education. The academic departments happen to be the anchoring points of any programme. The idea of creating multidisciplinary departments and schools will go a long way in sustaining and promoting multidisciplinary education. The floating of new courses, and programmes that have multidisciplinary perspectives become quite easy with the setting up of multidisciplinary departments and schools. (d) the multidisciplinary universities on par with IITs and IIMs under the umbrella term of 'Multidisciplinary Education and Research Universities (MERUs). Thus, NEP works out on almost all the aspects of higher education that are needed for the effective implementation of multidisciplinary education.

The policy also takes the notion of multidisciplinary education to new heights by expanding its purview by combining learning in classrooms with first-hand experiences gained in industry and field. This is quite an innovative way of looking at multidisciplinary education which interlinks not only disciplines but brings synergy to the learning process. Multidisciplinary education is also conceptualized as one that takes place at multi-sites and hence, the NEP makes the provision internship for students with local industry, businesses, artists and craft persons and with research agencies.

The framework and the action plan that the NEP provides for promoting multidisciplinary education are quite innovative and comprehensive. It touches upon almost all aspects of the education system – multidisciplinary courses, multidisciplinary pedagogy, multidisciplinary programmes, multidisciplinary departments and finally multidisciplinary universities to build, strengthen and promote multidisciplinary education. The policy also recommends strengthening multidisciplinary research, and multidisciplinary practices in resolving the problems by way of creating opportunities for multidisciplinary work in several sectors including academia, government sector and private industry.

Conclusion

Multidisciplinary education as envisaged in the NEP--2020 is quite unique in several respects. Unlike being influenced by the Western hybrid models of learning, the multidisciplinary education that the policy talks about is quite indigenous in nature and rooted in India's rich cultural and educational heritage. The notion of multidisciplinary education meticulously blends the spiritual, social, physical, and intellectual needs of the learners and provides for holistic education. The debates about multidisciplinary and interdisciplinary education tend to be rhetorical without serious contemplation of strategies for promoting them. The NEP provides for a far-reaching, workable action plan for building, strengthening and promoting multidisciplinary education at Institutes of Higher Learnings. The policy provides clarity and precision to the notion of multidisciplinary education. Drawing inspiration from India's rich cultural and educational heritage, the policy comes out with a holistic and comprehensive notion of multidisciplinary education. The inclusion of arts such as painting and singing, vocational skills such as carpentry and clothes making, professional subjects such as medicine and engineering, the science subjects such as mathematics and chemistry and soft skills such as communication and debate under the purview of multidisciplinary makes it quite holistic. The NEP comes out with a robust framework to promote multidisciplinary education. The provision of developing new multidisciplinary courses, launching multidisciplinary graduate, master's and doctoral programmes, creating multidisciplinary departments and schools and ultimately setting up Multidisciplinary Education and Research Universities (MERUs) will lead to the transformation of our education system towards multidisciplinary-centric education. The policy has upgraded the notion of multidisciplinary education by expanding its purview to include multidisciplinary pedagogy. The idea of interlinking classroom learning with those first-hand experiences in the industry is also the expansion of the notion of multidisciplinary education.

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Discerning the Changing Scenario of Medical Education in India

Thulasi A*

The Healthcare system is, unequivocally, an important indicator of the development of a nation. It is common knowledge that holistic medical education is a prerequisite to a robust healthcare system. Numerous changes have occurred in the medical curriculum over the last few decades in India. It is imperative to take stock of the quantitative changes that have taken place in regard to the number of medical colleges across all the states and union territories of India to take cognizance of the macro scenario and the same in the state of Tamil Nadu for the sake of discerning micro-level reality. New courses have been introduced from time to time without diluting the basic structure of medical pedagogy. Primarily the purpose of this descriptive paper is to bring to light both quantitative and qualitative aspects of medical education in India in general with a passing reference to the state of Tamil Nadu. There are many issues pertaining to medical education and profession, and this paper takes into account a few issues for discussion. They include: shortage of medical professionals; need for leveraging competency-based curriculum; structure; traditional wisdom; implications of modern technology in the medical profession; the rural-urban dichotomy of health care; community medicine; private sector participation in health care; and ethics are a few nuances that formed part of this discussion under medical education in India. Insights on ground reality about Tamil Nadu are included in the discussion which may pave way for improvising the existing healthcare ecosystem at the national level.

Human health is central to all other things and it has increasingly been realized during the pandemic period, that is, after February 2020. The world has looked up to medical professionals, who proved as saviours and crusaders of mankind across the countries both in treating COVID patients and in preparing vaccines. But for medical education, the entire human race would have been pushed to the brink of collapse. Therefore, it is beyond doubt that medical education scores over all other disciplines of science. Incidentally, India's uniqueness on the medical educational front is exemplified by the fact that India has the highest number of Medical colleges in the world (Goswami, 2015). But the healthcare sector has been facing a host of problems that need to be addressed on a war footing. The shortage of doctors is a longstanding problem in India. India produces only 64,000 medical graduates every year with a ratio of 7.8 doctors per 10, 000 population. Inadequate physicians are only the tip of the iceberg, there are myriad issues, challenges, and prospects which warrant attention and discussion.

Institutional measures have been undertaken from time to time. The replacement of the Medical Council of India (MCI) by the National Medical Commission (NMC) is a milestone in the history of medical reforms in India. It was known that MCI had been constituted under the Indian Medical Council Act, 1956, and eventually got dissolved. In 2020, the National Medical Commission came into force with due approval and the Act of Parliament in 2019. Quality of medical education, distribution of medical colleges across different states and union territories in India and in Tamil Nadu state, and changes in the medical curriculum structure are also discussed. In addition, the need for synergy between modern and traditional medical practices problems confronting medical professionals, and competition between public and private sectors in this realm are a few issues that the present paper intends to address. The information available as secondary sources have been engaged.

Distribution of Medical Colleges across States and Union Territories

India has the highest number of medical colleges among all the countries in the world. By looking at the distribution of medical colleges, as per the National Medical Commission website, India has 554 colleges of both Government and private colleges put together. Interestingly, the total number of Government colleges, state-wise, has

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not exceeded 26: Maharashtra, Tamil Nadu, and Uttar Pradesh have 26 Government colleges each, while the total number of medical colleges in India was 285, as of 2020-21. But the picture of state-wise private colleges was different. The State of Karnataka has 41, the maximum number of private colleges in India, while the number of Government colleges was 19. Maharashtra and Uttar Pradesh with 31 each, Telangana having 23, and Tamil Nadu with 26 private medical colleges, as shown in Table 1.

Table: 1 Medical Colleges across the States and Union Territories in India

	Medical Colleges (MBBS) - State Wise As per National Medical Commission Website 2020-21					
S. No	State	Number of Government Colleges	Seats	Number of Private Colleges	Seats	Total Colleges	Total Seats
1	Andhra Pradesh	13	2410	18	2800	31	5210
2	Arunachal Pradesh	1	50	0	0	1	50
3	Assam	7	1000	0	0	7	1000
4	Bihar	11	1390	6	750	17	2140
5	Chattisgarh	7	895	3	450	10	1345
6	Goa	1	180	0	0	1	180
7	Gujarat	17	3650	13	2000	30	5650
8	Haryana	5	710	7	950	12	1660
9	Himachal Pradesh	6	720	1	150	7	870
10	Imphal	0	0	0	0	0	0
11	Jharkhand	7	630	1	150	8	780
12	Karnataka	19	2900	41	6445	60	9345
13	Kerala	10	1555	21	2550	31	4105
14	Madhya Pradesh	14	2135	9	1450	23	3585
15	Maharashtra	26	4430	31	4570	57	9000
16	Manipur	2	225	0	0	2	225
17	Meghalaya	1	50	0	0	1	50
18	Mizoram	1	100	0	0	1	100
19	Nagaland	0	0	0	0	0	0
20	Orissa	8	1250	4	700	12	1950
21	Punjab	4	650	6	775	10	1425
22	Rajasthan	16	2900	8	1300	24	4200
23	Sikkim	0	0	1	50	1	50
24	Tamilnadu	26	3650	26	4350	52	8000
25	Telengana	11	1790	23	3450	34	5240
26	Tripura	1	125	1	100	2	225
27	Uttarakhand	4	525	2	300	6	825
28	Uttar Pradesh	26	3278	31	4250	57	7528
29	West Bengal	20	3150	6	850	26	4000
	UNION TERRITORIES						
1	Andaman Nicobar Islands	1	100	0	0	1	100
2	Chandigarh	1	150	0	0	1	150
3	Dadra And Nagar Haveli	1	150	0	0	1	150
4	Daman And Diu	0	0	0	0	0	0
5	Delhi	8	1222	2	200	10	1422
6	Jammu And Kashmir	8	985	1	100	9	1085
7	Lakshadweep	0	0	0	0	0	0
8	Pondicherry	2	380	7	1150	9	1530
	Total	285	43335	269	39840	554	83175

Source: Nmc Website

https://www.nmc.org.in/information-desk/college-and-course-search/

In so far as the North Eastern States are concerned, excepting Assam, no other state has crossed two in terms of Government colleges. Nagaland and Sikkim scored zero as far as Government College is

Table: 2 Medical Colleges Offering Postgraduate Programmes

S.No	State	Number of Government Colleges	Seats	Number Of Private Colleges	Seats	Total Colleges	Total Seats
	Medical Colleges (PG) - State Wise As per National Medical Commission Website 2020-21						
1	Andhra Pradesh	11	984	14	1252	25	2236
2	Arunachal Pradesh	0	0	0	0	0	0
3	Assam	8	667	0	0	8	667
4	Bihar	8	607	3	218	11	825
5	Chattisgarh	5	303	1	26	6	329
6	Goa	1	117	0	0	1	117
7	Gujarat	12	1605	5	412	17	2017
8	Haryana	3	284	4	252	7	536
9	Himachal Pradesh	2	219	1	92	3	311
10	Imphal	0	0	0	0	0	0
11	Jharkhand	4	218	0	0	4	218
12	Karnataka	20	1171	35	3831	55	5002
13	Kerala	9	861	16	496	25	1357
14	Madhya Pradesh	7	947	6	543	13	1490
15	Maharashtra	27	2549	29	2066	56	4615
16	Manipur	2	205	0	0	2	205
17	Meghalaya	1	33	0	0	1	33
18	Mizoram	0	0	0	0	0	0
19	Nagaland	0	0	0	0	0	0
20	Orissa	4	581	3	268	7	849
21	Punjab	4	394	5	309	9	703
22	Rajasthan	9	1396	6	444	15	1840
23	Sikkim	0	0	1	22	1	22
24	Tamilnadu	20	2012	24	1649	44	3661
25	Telengana	7	907	15	1164	22	2071
26	Tripura	1	79	1	5	2	84
27	Uttarakhand	4	945	2	213	6	1158
28	Uttar Pradesh	16	1451	20	1159	36	2610
29	West Bengal	21	1431	5	130	26	1561
UNION TERRITORIES							
1	Andaman Nicobar Islands	0	0	0	0	0	0
2	Chandigarh	2	456	0	0	2	456
3	Dadra And Nagar Haveli	0	0	0	0	0	0
4	Daman And Diu	0	0	0	0	0	0
5	Delhi	18	2012	1	49	19	2061
6	Jammu And Kashmir	3	486	1	47	4	533
7	Lakshadweep	0	0	0	0	0	0
8	Pondicherry	2	230	7	521	9	751
	TOTAL	**231**	**23150**	**205**	**15168**	**436**	**38318**

concerned. However, Sikkim has one private college and the number intake has been enhanced from 50 to 250 now. Arunachal Pradesh, Meghalaya, Mizoram, and Tripura have one Government college each, and Tripura has only one private college.

Union territories displayed a docile picture; Andaman Nicobar Islands, Chandigarh, Dadra, and Nagar Haveli have one Government medical college each, with no single private college. Daman and Diu and Lakshadweep have no medical college, neither Government nor private. Other states like Delhi and Jammu and Kashmir have 8 Government colleges each and Delhi has only 2 private colleges and Jammu and Kashmir have only one private college. Pondicherry state has 2 Government and 7 private medical colleges.

Importantly, the total number of seats available was 83,175 for the MBBS programme in India. The Government medical colleges have 43,335 seats and the remaining 39,840 seats are catered by the private medical colleges. Interestingly, the total number of private colleges is 269 which is 16 short of the total number of Government colleges (see table 1). No wonder, in another ten years down the line, the total number of private colleges would outnumber the number of Government colleges in India.

Postgraduate Programmes

As per the NMC Website, 2020-21, the total number of postgraduate (PG) seats, was 38,318 across 436 medical colleges in India. Maharashtra state tops the list in terms of the number of colleges with 56 offering PG programmes, both government and private put together, followed by Karnataka with 55 colleges. Third, on the list is the state of Tamil Nadu with 44 colleges followed by Uttar Pradesh with 36 colleges. Compared with private medical colleges, the government medical colleges offer more PG seats with 23,150 and the private colleges with 15,168 PG seats (Table 2). Even with respect to the total number of colleges offering PG programmes, the government medical colleges have an edge over the private colleges, 231:205 respectively. Among the union territories, Delhi offers a maximum of 2,061 seats through both government and private medical colleges. Pondicherry union territory has 9 colleges offering 751 seats; Jammu and Kashmir

have 4 colleges offering 3 seats. Pondicherry Union Territory has the highest number of private medical colleges with 7 offering PG programmes among the Union Territories in India. About 83,175 students pass out as MBBS graduates but only 46 per cent of them i.e. 38,318 students stand eligible to join the postgraduate programme by means of qualifying through the entrance examination and even those who joined expressed their displeasure over not getting a seat in a course of their choice or college in some cases. It is to clarify here that postgraduate programmes include not only Master of Medicine (MD) and Master of Surgery (MS), but also diploma courses as well.

Super Specialty Programme

In India, Super Specialty programmes are of advanced level of medical education, where candidates with postgraduate degrees in medicine are eligible to do. On completion of Super Specialty programs, successful candidates shall be awarded either DM (Doctor of Medicine) or MCh (Master of Chirurgiae) degree. In medical education, super-specialty programmes are highly respected professional courses, where the total number of seats available in India is 4,421 as per the NMC Website, 2020-21. Both Government and private medical colleges offer this program; there are 118 government and 61 private medical colleges and a total of 179 are deemed to be equipped to offer super specialty programs. The state of Tamil Nadu has 12 colleges, which is the maximum followed by Delhi with 11 colleges engaged with this program. Delhi has an edge over the total number of super-specialty students with 669, while Tamil Nadu has 594 students. Surprisingly, Uttarakhand district has only one Government and two private medical colleges offering super-specialty, but the total number of seats showed 574 in Table 3. Table 4 shows the details of All India Institutes of Medical Sciences(AIIMS) in country and Table 5 shows the Super Specialty Sub-streams.

Status of Medical Education in Tamil Nadu

As of 2020-21, the Tamil Nadu state comprises 38 districts, of which 32 districts have at least one medical college, either Government or private, 32 districts have Government colleges, and 2 districts with private medical colleges Eight districts have

Table: 3 Medical Colleges Offering Super Specialty Programmmes

S.No	State	Number of Government Colleges	Seats	Number of Private Colleges	Seats	Total Colleges	Total Seats
	Medical Colleges (Super Specialty) - State Wise As per National Medical Commission Website 2020-21						
1	Andhra Pradesh	5	81	5	54	10	135
2	Arunachal Pradesh	0	0	0	0	0	0
3	Assam	2	48	0	0	2	48
4	Bihar	2	31	0	0	2	31
5	Chattisgarh	2	29	0	0	2	29
6	Goa	1	2	0	0	1	2
7	Gujarat	6	105	1	5	7	110
8	Haryana	1	10	1	8	2	18
9	Himachal Pradesh	1	7	0	0	1	7
10	Imphal	0	0	0	0	0	0
11	Jharkhand	1	9	0	0	1	9
12	Karnataka	9	157	14	220	23	377
13	Kerala	8	173	6	76	14	249
14	Madhya Pradesh	5	43	1	15	6	58
15	Maharashtra	11	237	8	70	19	307
16	Manipur	1	5	0	0	1	5
17	Meghalaya	1	2	0	0	1	2
18	Mizoram	0	0	0	0	0	0
19	Nagaland	0	0	0	0	0	0
20	Orissa	4	85	2	44	6	129
21	Punjab	2	2	2	29	4	31
22	Rajasthan	7	192	3	62	10	254
23	Sikkim	0	0	0	0	0	0
24	Tamilnadu	12	369	9	225	21	594
25	Telengana	3	146	5	20	8	166
26	Tripura	0	0	0	0	0	0
27	Uttarakhand	1	567	2	7	3	574
28	Uttar Pradesh	11	226	0	0	11	226
29	West Bengal	7	197	0	0	7	197
	UNION TERRITORIES						
1	Andaman Nicobar Islands	0	0	0	0	0	0
2	Chandigarh	2	101	0	0	2	101
3	Dadra And Nagar Haveli	0	0	0	0	0	0
4	Daman And Diu	0	0	0	0	0	0
5	Delhi	11	669	0	0	11	669
6	Jammu And Kashmir	1	35	0	0	1	35
7	Lakshadweep	0	0	0	0	0	0
8	Pondicherry	1	52	2	6	3	58
	Total	**118**	**3580**	**61**	**841**	**179**	**4421**

Source : NMC WEBSITE
https://www.nmc.org.in/information-desk/college-and-course-search/

Table 4: Total Number of AIIMS in India

S. No	Name	Announced	Established	City/Town	State/UT	Phase	Status
1	AIIMS New Delhi	1952	1956	New Delhi	Delhi	0	Functional
2	AIIMS Bhopal	2003	2012	Bhopal	Madhya Pradesh	1	Functional
3	AIIMS Bhubaneswar	2003	2012	Bhubaneswar	Odisha	1	Functional
4	AIIMS Jodhpur	2003	2012	Jodhpur	Rajasthan	1	Functional
5	AIIMS Patna	2003	2012	Patna	Bihar	1	Functional
6	AIIMS Raipur	2003	2012	Raipur	Chhattisgarh	1	Functional
7	AIIMS Rishikesh	2003	2012	Rishikesh	Uttarakhand	1	Functional
8	AIIMS Raebareli	2012	2013	Raebareli	Uttar Pradesh	2	Functional[14]
9	AIIMS Mangalagiri	2014	2020	Mangalagiri	Andhra Pradesh	4	Partially Functional[14]
10	AIIMS Nagpur	2014	2018	Nagpur	Maharashtra	4	Partially Functional[14]
11	AIIMS Gorakhpur	2015	2019	Gorakhpur	Uttar Pradesh	4	Partially Functional[14]
12	AIIMS Kalyani	2014	2019	Kalyani	West Bengal	4	Partially Functional[14]
13	AIIMS Bathinda	2014	2015	Bhatinda	Punjab	5	Partially Functional[14]
14	AIIMS Guwahati	2015	2020	Changsari	Assam	5	Class Started[14]
15	AIIMS Vijaypur	2015	2020	Vijay Pur	Jammu and Kashmir	5	Class Started[14]
16	AIIMS Bilaspur	2015	2020	Bilaspur	Himachal Pradesh	5	Class Started[14]
17	AIIMS Madurai	2018 (As per 2014-15 budget)		Madurai	Tamil Nadu	5	Haven't-Started for last 3 Years
18	AIIMS Darbhanga	2020		Darbhanga	Bihar	5	Under-Construction
19	AIIMS Kashmir	2019		Awantipora	Jammu and Kashmir	5	Under-Construction
20	AIIMS Deoghar	2017	2019	Deoghar	Jharkhand	6	Class Started[14]
21	AIIMS Rajkot	2017	2020	Rajkot	Gujarat	6	Class Started[14]
22	AIIMS Bibinagar	2018	2019	Bibinagar	Telangana	7	Partially Functional[14]
23	AIIMS Manethi	2019		Manethi	Haryana	8	Under-Construction

Source : *https://en.wikipedia.org/wiki/All_India_Institutes_of_Medical_Sciences*

Table 5: Postgraduate and Super Specialty- Sub-streams

S. No	Dm - Substreams	S. No	Dm - Substreams	S. No	Dm - Substreams
1	DM - Addiction Psychiatry	30	DM - Neuroimaging & Interventional Radiology	59	DM- Neuro - Anesthesiology
2	DM - Cardiac Radiology	31	DM - Neurology	60	DM- Neuro - Anesthesiology & Critical Care
3	DM - Cardiac-Anaesthesia	32	DM - Neuropathology	61	DM- Onco - Anesthesiology & Palliative Medicine
4	DM - Cardiology	33	DM - Onco Pathology	62	DM- Paediatric Emergency Medicine
5	DM - Cardiovascular Imaging and Vascular Interventional Radiology	34	DM - Onco-Anesthesia	63	DM- Pulmonary, Critical Care & Sleep Medicine
6	DM - Cardiovascular Radiology and Endovasular Intervention	35	DM - Oncology	64	DM- Pulmonary, Medicine & Critical Care
7	DM - Child & Adolescent Psychiatry	36	DM - Organ Transplant Anaesthesia & Critical Care	65	DM- Radiotherapy & Oncology
8	DM - Clinical Haematology	37	DM - Paediatic Nephrology	**S.NO**	**M.Ch - SUBSTREAMS**
9	DM - Clinical Immunology & Rheumatology (Internal Medicine)	38	DM - Paediatric Anaesthesia	1	D.M.-Reproductive Medicine/M.Ch.-Reproductive Medicine and Surgery
10	DM - Clinical Immunology & Rheumatology (Paediatrics)	39	DM - Paediatric and Neonatal Anaesthesia	2	M.Ch - Endocrine Surgery
11	DM - Clinical Pharmacology	40	DM - Paediatric Critical Care	3	M.Ch - Gynaecological Oncology
12	DM - Critical Care Medicine	41	DM - Paediatric Endocrinology	4	M.Ch - Hepato Pancreato Biliary Surgery
13	DM - Endocrinology	42	DM - Paediatric Haematology Oncology	5	M.Ch - Neuro Surgery
14	DM - Gastroenterology	43	DM - Paediatric Hepatology	6	M.Ch - Paediatric Orthopaedics
15	DM - Geriatric Psychiatry	44	DM - Paediatric Nephrology	7	M.Ch - Paediatric Surgery
16	DM - Haematology Pathology/Hematopathology	45	DM - Paediatric Neurology	8	M.Ch - Plastic Surgery/Plastic & Reconstructive Surgery
17	DM - Hepatology	46	DM - Paediatric Oncology	9	M.Ch - Surgical Gastroenterology/G.I. Surgery
18	DM - Histopathology	47	DM - Paediatric Pulmonology	10	M.Ch - Surgical Oncology
19	DM - Immunology	48	DM - Paediatric Pulmo-oncology & Intensive Care	11	M.Ch - Thoracic Surgery/Cardio Thoracic Surgery/Cardio Vascular and thoracic Surgery
20	DM - Infectious Disease	49	DM - Pediatrics Cardiology	12	M.Ch - Urology/Genito-Urinary Surgery
21	DM - Infectious Diseases	50	DM - Pediatrics Gastroenterology	13	M.Ch - Vascular Surgery
22	DM - Intensive Care	51	DM - Pul. Med. & Critical Care Med.	14	M.Ch. - Hand Surgery
23	DM - Interventional Radiology	52	DM - Pulmonary Medicine	15	M.Ch. - Head and Neck Surgery
24	DM - Medical Genetics	53	DM - Rheumatology/Clinical Immunology & Rheumatology		
25	DM - Neonatology	54	DM - Theraputic Medicine		
26	DM - Nephrology	55	DM - Trauma Anesthesia & Acute Care		
27	DM - Neuro Anaesthesia	56	DM - Virology		
28	DM - Neuro Radiology	57	DM - Vitreo-retinal Surgery		
29	DM - Neuroimaging & Interventional Neuroradiology	58	DM- Endocrinology & Metabolism		

Source : https://www.nmc.org.in/information-desk/college-and-course-search/

Table: 4 Medical Colleges in Tamil Nadu

S.No	Districts	Number of Government Colleges	Seats	Number of Private Colleges	Seats	Total Colleges	Total Seats
		District- Wise As per National Medical Commission (2020 - 2021)					
1	Chengalpattu	0	0	1	100	1	100
2	Chennai	5	850	8	1400	13	2250
3	Coimbatore	2	250	3	550	5	800
4	Cuddalore	1	150	0	0	1	150
5	Dharmapuri	1	100	0	0	1	100
6	Erode	1	100	0	0	1	100
7	Kanchipuram	1	100	6	1200	7	1300
8	Kanyakumari	1	150	1	100	2	250
9	Karur	1	150	0	0	1	150
10	Madurai	1	250	1	150	2	400
11	Perambalur	0	0	1	150	1	150
12	Pudhukottai	1	150	0	0	1	150
13	Salem	1	100	2	300	3	400
14	Sivagangai	1	100	0	0	1	100
15	Thanjavur	1	150	0	0	1	150
16	Theni	1	100	0	0	1	100
17	Thiruvallur	0	0	1	150	1	150
18	Thiruvannamalai	1	100	0	0	1	100
19	Thiruvarur	1	100	0	0	1	100
20	Thoothukudi	1	150	0	0	1	150
21	Tirunelveli	1	250	0	0	1	250
22	Trichy	1	150	1	150	2	300
23	Vellore	1	100	1	100	2	200
24	Villupuram	1	100	0	0	1	100
	Total	**26**	**3650**	**26**	**4350**	**52**	**8000**

Source: NMC WEBSITE - https://www.nmc.org.in/information-desk/college-and-course-search/

both Government and private college. Being the capital of the state, Chennai has 5 Government and 8 private colleges. Coimbatore district has 2 Government and 3 private colleges. Kanchipuram district has 6 private medical colleges and Salem has 2 private medical colleges.

Totally, there are 52 medical colleges with an equal proportion of 26 Government and 26 private colleges. Regarding the total number of available seats, there exist 8000 seats for the undergraduate MBBS programme of which, the private college offers 4,350 and the remaining 3,650 seats by the Government colleges as presented in Table 4.

Discussion

Taking cognizance of the macro and micro level scenarios of the total number of colleges, programmes offered, the list of sub-streams, and the geographical distribution of medical institutions as narrated in the preceding pages, it is necessary to discuss a few issues for a better understanding of the system in vogue and to initiate measures to streamline the same.

Shortage of Medical Professionals

In regard to the adequacy of allopathic doctors in India, the doctor-patient ratio in 2020 was 1: 1511,

which means one doctor is available for 1511 patients. But the WHO norm is 1:1000 and India is confident of achieving the WHO norm by 2024, according to the Health Ministry of India. Another point is a skewed distribution of doctors; more than a per cent of the total allopathic doctors are concentrated in five states: Maharashtra with 15 per cent, Tamil Nadu with 12 per cent, Karnataka with 10 per cent, Andhra Pradesh with 8, per cent and Uttar Pradesh with 7 per cent. However, India's performance on the Healthcare front since Independence has been encouraging; as the improved life expectancy stands a testimony. The average life of survival and longevity was 28 years in 1947 and it had improved to 70 years in 2020, which can be attributed to medical health care in India. The Government has been making efforts to overcome the shortages by way of increasing the seats; 30,000 MBBS seats and 24,000 postgraduate seats since 2014, besides granting and starting new medical colleges across different states and union territories of India.

Restructuring Medical Curriculum

In regard to curriculum structure, higher education in India has to be updated to meet the global standards along with creating students who are job competent. Such a scenario necessitates a change in syllabus, teaching methods, time frame, assessment and testing, and expected outcome. Competency-based education would be a good option to meet the challenges in the ever-changing world (Chacko, 2014). Traditional knowledge-based education, teachers giving lectures about subjects, students striving to remember all aspects and reproduce in the examination, final theoretical examinations, and mark-based merits should be changed to make education student-oriented. Thomas Chacko explains that 21st-century education needs reforms in three sectors like informative- information and skills to produce experts, formative- focus on socialization and values to create professionals, and transformative- leadership attitude to produce changing agents.

In the health education system, learning should change from teacher-centric to student-centric. In the current trend of rapid advances in science, knowledge keeps changing, and old theories become obsolete. As science gets updated fast what students learn, keeps changing so updating the knowledge becomes necessary. So, the teacher should be a facilitator to acquire knowledge. Thomas Chacko suggests *Curriculum driving force should change from knowledge acquisition to knowledge application, the process driving force should be the student instead of the teacher, responsibility for content should lie with both teacher and student instead of the teacher alone, and timing of assessment must be formative and not summative, programme completion time may be varied and not fixed.*

Competency-based medical education can be implemented by first identifying the elements of competence---a list of physicians' activities, reports, and tasks, critical behavior elements to assess qualitative professional performance, and knowledge of public healthcare strategies, and statistics. Next, is mastery gaining in a self-paced manner to attain the competency-- sequential acquisition of various competencies, setting goals and attaining satisfactory level, self-assessment and moving on to next. Assessment of competence- at entry-level to judge the baseline requirements and their willingness to future learning, formative assessment as to what is learnt and what needs to be learnt, and summative assessment of whether the required level of competency is achieved.

In preparing the teachers, students, and the institution, the teachers should be facilitators. Teachers must continue professional development, teachers should be planners to make all students reach the desired level at varied times if needed, they should manage instructional resources and also act as performance assessors. Students must take personal responsibility in learning instead of passive learning, adopt self- modeled methods to gain competence in desired activities, conduct self-assessment, get feedback, document and demonstrate, and finally set a timeframe for themselves. Changes in the institution are as follows: create a benchmark for assessment, co-ordinate medical students and PG residents, expand programmes for faculty development, create a better system for student assessment, garner all resources to implement a learner-centric PG program, update infrastructure for this process and create a change in teacher/ learner ethos.

By and large, a competency-based system if implemented in times to come would create medical graduates who are ready to perform in any situation. Soon after graduation, they would be adept in all

basic procedures, know when and where to seek assistance, judge the situation, and act, have a societal view, can assess the community needs, and plan strategies to overcome any calamity.

Implications of Modern Technology in the Medical Profession

Modern technology has a role to play in modern medical education. This has paved the way to treat patients remotely, and even perform surgery from a faraway place. Diagnosis and treatment have been made more accurate and time-saving through instruments and automation that within a day the diagnosis and treatment can be started for many life-threatening diseases without delay. Newer technologies make surgery less invasive, painless, and early healing. Advanced medical technologies are bound to happen in the future and students need to be given basic exposure to such gadgets and made receptive to adapt to changes. The balance maintained between traditional and modern technology usage, judging the apt mode of treatment for each patient, and understanding the merits of modern instruments should be instilled into new medical graduates.

Another facet of modern technology is the application of Artificial Intelligence (AI). For students of the modern age, AI would be the language and medical students are no exception. Shreds of evidence are mounting to show the wider usage of Artificial Intelligent computer systems in medical sciences; starting from diagnosis of patients to the final treatment, all the stages can be done from a distance too. By means of integrating AI in the medical education curriculum, the health care system can be promoted to an advanced level with *automated tasks* and analysis of *big patient data sets*, which will render medical service at a lower cost.

Private Sector Participation in Medical Education and Profession

More importantly, the private sector participation in the health care system in India is substantial and praiseworthy. An already established fact was: more than 70 per cent of health care services are from the private sector. As high as 72 per cent of patients from rural areas and 79 per cent of patients from urban areas have resorted to private health care. It was really fascinating to learn the track record of private sector participation in health care in India. In 1947, at the time of Independence, private participation in the health sector was less than 10 per cent and it witnessed a phenomenal increase of 79 per cent by 2020. Medical education in terms of the number of private medical colleges was in tandem with the government medical colleges. Tamil Nadu, in particular, the ratio of government *vis-à-vis* private medical colleges was 26:26. Quality education, logistics, and the infrastructure facilities in a few private medical colleges in India are far better, on par with developed countries. Establishing a private hospital and college, though formidable, costs 300-400 crores of rupees with a recurring cost of 50 crores of rupees per annum, as per the rough estimate by an anonymous source. A few private educational entrepreneurs come forward to establish such medical colleges in the last two decades in Tamil Nadu, which ultimately contribute a great deal to the health sector of the state. Employment generation is a silver lining of private hospitals and medical colleges. However, medical colleges in India *vis a vis* Tamil Nadu face a severe shortage of medical faculty for teaching at the undergraduate, postgraduate, and super-specialty levels. The situation is reportedly precarious. Understandably, doctor professionals either start private practice or join corporate hospitals or go abroad. Private corporate hospitals are the most sought-after health care avenues for upper middle class and affluent sections of the population.

Rural- Urban Disparity in Health Care

Another major problem confronting the healthcare system in India is urban-rural disparity in healthcare delivery practices. It is widely reported about the deficiency of health services in rural India that it is less satisfactory when compared in urban areas (Deo, 2013). This is a longstanding criticism but has still not been resolved fully to date. However, institutional efforts have been made even since the release of the Bhore Committee report in 1946, in bringing the gap between rural and urban health services. In 1955, during the first five-year plan period, there existed 77 PHCs and the number had increased to 23887 in 2011 and further increased to 30,045 as of March 2019. Of which 24,855 were in rural India and the rest 5, 190 in urban areas. Basically, PHCs are state-owned medical health service with a single allopathic doctor serving per PHC. To reiterate the point, 80 per cent of health care

services are provided by the private sector. Allopathic doctors are seldom found practicing in rural areas as per a news report. Deo(---) argues that rural PHCs not only need more doctors but also specialists on a priority basis; more than 60 per cent of specialists' posts remained vacant for several years.

Community Medicine

The community medical system is an integral part of medical education. Analyses of data, prediction of epidemics, control of endemics, tracing the origin of a disease, provide preventive medical care to vulnerable groups is a few criteria to be inducted. Epidemics, pandemics, and lifestyle diseases could be managed only through a holistic approach and therefore future doctors must have cognizance to such modalities of treatment.

Alternate Medicine-Synergy Between Modern and Alternate Medicine

Allopathic medicine is not against Alternate medicines and the relationship between the two is harmonious. Alternate medicines may supplement allopathic but can never supplant allopathic medicines in India. AYUSH, was founded in November 2015. (AYUSH- Ayurveda, Yoga, Unani, Naturopathy, Siddha, Homeopath). This system of medicine concentrates on the way of living with well-established concepts to prevent diseases and promote health. These practices have a major role in non-communicable diseases, lifestyle diseases, long-term illnesses, drug-resistant diseases, and the emergence of new diseases. Ayurveda - An alternative medical system with roots in India, using medicines, diets, meditation, yoga, massage, laxatives and so on to treat various diseases. Yoga - A group of physical, mental and spiritual practices originated in ancient India. Unani - Arabian traditional medicine. This is based on elements in the body whose balance leads to health and imbalance to illness. Naturopathy – is a health care that uses traditional natural remedies to help the body to heal by itself with Herbs, acupuncture, exercise, and nutri- counseling. Siddha - Traditional South Indian system of healing. India's oldest system of medicine was ancient medical practices, spiritual discipline, alchemy, and mysticism Homeopathy- is the German system of medicine, which believes that the substance that causes symptoms of a disease in healthy people, can cure similar symptoms in sick people.

Traditional knowledge in allopathic medicine does not mean the inclusion of traditional medical streams like Siddha or Ayurveda. The cognition of human anatomy, physiology, psychology, and clinical examination and diagnosis were the basis of diagnosis and treatment of past time. Present-day practice relies more on laboratory and technology for diagnosis to an extent that patients need to carry out a battery of testing before consulting a physician. There should be a balance between these two, such that the new entrants should be fully trained in observation, conversation, auscultation and palpation to form a tentative diagnosis and prescribe relevant testing parameters to confirm the diagnosis. All patients yearn to have confidence, connect and trust in their physician, such empathy with patients can cure most diseases with less effort. Students of medicine need to be taught to develop such mindset, proper bedside manner, ethical issues, and creation of the trust.

WHO Global report on Traditional and Complementary medicine 2019 highlights on Sustainable Development goal 3 – ensuring healthy lives and promoting well-being for all ages, achieved through universal health coverage through the inclusion of traditional and complementary medicine (T&CM). The declaration of Asthana, adopted at the Global Conference on Primary Health Care in October 2018, emphasized adopting scientific as well as traditional knowledge in extending access to a range of health care services. The landscape for T&CM has been improving since 2002 to date, and 88 percent of member states have acknowledged their use of T&CM 9 (about 170 countries). These countries have formally developed policies, laws, regulations, and programs for T&CM.

Besides this, the medical profession still continues to enjoy pride and prestige in our Indian society. Doctors do command respect among people and the sociological aspects of the medical profession are another area, which warrants discussion. In addition, be it school-going children or college students craving for medical admission continues to stay for decades. Parental pressure on their wards exacerbates the problem. Specifically, doctor parents who are running nursing homes or big corporate hospitals would necessarily put their wards in the medical profession, regardless of children's preference for medical education.

Last but not least is the ethical issues of the medical profession. Medical practices ought to cater to the needs of all sections of the population regardless of caste, creed, and religion by rendering selfless medical service to mankind. Students of medicine on completion take the Hippocrates oath which has more emphasis on morals and ethics. The patients place their trust in their doctor to an extent that the doctor should vouch for their health, safety, and secrecy. Behavior with the patients, being truthful about their condition, and maintaining trust and decency are a few ethical practices to be incorporated into the medical curriculum even at the graduate level.

Conclusion

There is no gainsaying the fact that India is the world leader in medical education. It is still a paradox to be a country with a shortage of doctors, more so in rural India. Further investigation is warranted to understand whether it is due to faulty management resulting in the maldistribution of doctors. The inadequacy problem is compounded by the population explosion also. Competency-based medical education can be a game-changer because medical education in India is required to take on dual responsibility in the future. Improving the health services in India is essential to catch up with developed countries in medical research and innovation to promote high-tech intervention to become competent in the global market. The establishment of the National Medical Commission (NMC) by superseding the Medical Council of India has to prove to be worthy for shortfalls and lacunae on the medical education front to be rectified before long.

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Innovative Applications of Online Pedagogies

Chhaya Goel* and Devraj Goel**

COVID-19 lockdowns have forced us to employ e- ways digital ways for e-teaching and e-learning. There have been evident shifts from Teacher driven pedagogy to learner-driven pedagogy. Many innovative approaches have emerged for online pedagogies. germination, incubation, creation, construction, connection, and innovation are the terms which are being used frequently in present-day society. To what extent we have been in a position to re-engineer our education for learner progression? We like to be a pioneer; a quintessential recluse or the run of a mill with name and fame. At the end of life, we find that life is defined more through choices and actions than through degrees, designations and positions!

There is a move that ITEP be offered by multidisciplinary universities and Higher Education Institutions. Name any single university globe over which is the true representative of the universe. Why should we label present-day universities as universities? Online is the Digital Electronic Flow of Messages in the strings of 0s and 1s through a grammatical expression. *Aryavrut* has *Sanatan Sanskruti* which means *Chir Puratan* and *Nit Nootan*. How many of us are rooted in our *Sanskruti*? Pedagogy is a discipline which deals with the principles of teaching. To what extent we are rooted in our *Vedas*, *Upnishdhas* and *Puranas*? How many of us have gone through *Shrimadbhagvadgita* and *Shrimadbhagvadam*? The ultimate aim of Education is the development of Universal Beings and further, transcend Time-Space- Senses- Mind and Intellect to realize the continuous connect of *Aatma* with *Pramatama*? Where do we stand with respect to the 4th Industrial Revolution and beyond? Let us introspect and respect our culture. Westernization may not be civilization! Modernization may not be Civilization! The theme of this article is where the online pedagogies are taking us to. How innovative are e- ways, digital ways and online pedagogies? What do we mean by online? Where from the online pedagogies originated? What should flow online and offline? Earlier, society was governing society. Then the State started governing the society. Now the economy is overarching both the Society and State. Why are we so keen on online pedagogies? What is the priority level of Education? How innovative are the pedagogies whether online or offline? Which philosophies govern our education– naturalism, realism, idealism eclecticism? Are we innovators or borrowers or both? How much do we invest in Education, whether online or offline?

Innovations for Online Pedagogies

There is an evident shift from Standard Density to High-Density Cameras. Now there are 360-degree Cameras. 360-degree videos, also known as immersive videos or spherical videos, are video recordings where a view in every direction is recorded at the same time, shot using an omnidirectional camera or a collection of cameras. During playback on a normal flat display, the viewer has control of the viewing direction like a panorama. It can also be played on displays or projectors arranged in a sphere or some part of a sphere.

Linear Editing to Non-Linear Editing

While linear editing is tied to the need to sequentially view a film or hear the tape, non-linear editing enables direct access to any video frame in a digital video clip, without having to play or scrub/ shuttle through adjacent footage to reach it, as is necessary with video tape linear editing systems.

Pedagogy

There are various principles of teaching, styles of teaching, skills of teaching,   devices of teaching, maxims of teaching, modes of teaching and models of teaching.

Various Online Pedagogies

- **MOOCs:** Massive Open Online Courses
- **FOSS:** Free and Open System Software
- **VR:** Virtual Reality
- **AR:** Augmented Reality
- **MR :** Mixed Reality

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- **OERs:** Open Education Resources

- **NROER:** National Repository of Open Education Resources

- **SWAYAM:** Study Webs of Active- Learning for Young Aspiring Minds

- **DIKSHA:** Digital Infrastructure for Knowledge Sharing

- **E-VIDYA:** The Pradhan Mantri eVidya is an initiative by the Ministry of Education that will help in facilitating access to digital/online learning as well as teaching materials of various types among students and teachers.

Advantages of MOOCs

Well-designed courses, variety, flexibility, self-pacing, interaction amongst masses of course mates, instant assessment and feedback.

1. One-stop top web and mobile-based interactive e-content for all courses from High School to University level.

2. High-quality learning experience using multimedia on an anytime, anywhere basis.

3. State-of-the-art system that allows easy access, monitoring and certification.

4. Hybrid model of delivery that adds to the quality of classroom teaching.

Four Quadrant Approach

1. e-Content (PDF, Text, e-Books, Illustrations, video demonstrations, documents and Interactive simulations) along with self-assessment.

2. e-Tutorial (Video/Audio)

3. Web resources (related links, Wikipedia, open content etc.).

4. Discussion forum

Apart from these 4 quadrants, transcriptions of the video content will also be provided. Each module will be 30 min video (3000 words app.) So, each course will contain 40 modules (20 hrs video)

Additional Requirements

- Title of the Course
- Subject
- Class
- Prerequisite knowledge

- About the course

- Short description of the course

- Long description of the course

- Mentors/Teachers detail with Photograph

- Objectives of the Course

- Syllabus as per Units and Lessons and Time Schedule (Week wise)

- Course introductory video

- Course Image

UG & PG Courses on SWAYAM

- In the Scenario of the Second Wave of COVID-19, Universities and Colleges were requested to make optimum use of the SWAYAM online platform for the benefit of the students/learners. The list of 83 UG and 40 PG MOOCs, which were ready to be offered on the SWAYAM platform in July-October Semester 2021 could be seen at -> *https://swayam. gov.in/CEC.*

- It has an enabling provision for an institution to allow up to 40% of the total courses being offered in a particular programme in a semester through the online learning courses offered through the web platform www.swayam.gov.in

Policy Matters

- Students can opt for a maximum of 20% (now 40% in COVID pandemic) online examination per class for credit transfer.

- Proctor examination for certification.

Another PG MOOC ready to be offered through SWAYAM

- Another PG Program for Teacher Education (M.Ed. & M.A. (Education)) is ready to be offered, namely: *Perspectives, Issues and Research in Teacher Education having all the four quadrants available on the NCERT link : https://youtube. com/playlist?list=PLUgLcpnv1Yiclt1iYh1_ QoaxHhIHs8WsW*

FOSS Tools

- **Freeplane –** Creating mind maps

- **Scratch-** Creating 2D animation

- **Easelly-** Creating Infographics

- **H5P-** Creating Interactives
- **Audacity-** Audio Editing Tools
- **Open Shot Video Editor-** Editing Videos

Augmented Reality, Virtual Reality & Mixed Reality

- Attempts are being made for developing AR VR and MR employing various software, such as unity, blender, C- Sharp and euphoria.
- Microsoft has come up with holoLens- a highly advanced facility for the production of AR.
- Now we are producing energized textbooks and open pages along with URLs.
- E-Compendiums of Educational Research
- E-compendiums of Educational Research were developed in several volumes containing abstracts of doctoral studies conducted in India.
- To begin with the initial three volumes were available on the Intel Site www.educationinindia.net
- Progressively the volumes were available on www.icorecase.org
- Now we have come up with several volumes.

Work with Google Classroom

- Google Classroom is LMS, a part of Google Workspace, it is used as Licensed as well as free.
- The licensed version (Google Meet from Google Classroom)
  - Education (free licence)
  - Education plus (paid)

Practices with Google Classroom

- Share Material
  - Upload File
  - Links
  - YouTube
  - From Google Drive
  - Google Docs, Sheets, Slides etc.
- Create Assignment & Grade with rubric
  - Create Assignments, set due dates,

- Assess with rubric (advanced version with Education Plus plans)

Collaboration in Google Classroom

- Google Meet
  - Google workspace Education plan
  - Group work could be assigned and monitored with Education plus using Breakout rooms
- Google Chats
  - Google chat could also be used to communicate and collaborate
- Announcements in Google Classroom
- Quiz could be attached with Google Classroom

Innovative Practices in Assessment

- Assessment with Fun
  - Kahoot (brings Drops-Language Learning, National Geography and many others)
  - Quizizz (Create Questions from n number of Quizizz)
    - Assign a quiz to Google Classroom)
    - Import Google forms
    - Formative assessment with Live Instructor Paced)
- Vevox (formative Assessment tool)
- Socrative (formative assessment in blended classes)

Innovative Practices in Teaching

- Edpuzzle brings resources from Technology Entertainment Design (TED), Discovery etc to Google Classroom
- Diksha brings all the textbook and related material
- ePathshala provides e-resources
- MOOCs
- National Repository of Open Educational Resources

Some Learning Tools

- Google Earth (history, geography)
- Geogebra (Maths with fun)
- Tinker CAD (explore the creativity)
- Arvind Gupta Toys

- TED/NatGeo/Discovery
- AR based apps
- VR based apps
- MR based apps

Institutionalization of Courses and Degree Programs in Higher Education

- Computer Education at B.Ed. Level
- ICT at M.Ed. Level
- Taxonomy of Educational Skills in Teacher Education
- Bachelor of Computer in Education
- Master of Computer in Education

Online Pedagogy: System Design Considerations

- Prototype or Fully Functional
- Centralized or Decentralized
- Build or Buy
- Designing Development and Implementation of a:
- Learning Resources Management System (LRMS)
- Time Space Personnel Management System (TSPMS)

These LRMS and TSPMS were developed at the School of Education, DAVV, Indore for the School of Education library management and the TSPM System, that is, Time Table of the CAT School Indore.

E-Compendiums of Educational Research

- E-compendiums of Educational Research were developed in several volumes containing abstracts of doctoral studies conducted in India.
- To begin with the initial three volumes were available on the Intel Site *www.educationinindia.net*
- Progressively the volumes were available on www.icorecase.org (Research Abstracts Volume 1—5).

SAP Spectrum

- SAP SPECTRUM-a quarterly e-newsletter was started at CASE, MSU, and Vadodara to share the various programs conducted under the Special Assistance Program and to be conducted.

A Consortium of Research in Education

- www.icorecase.org

Indian Consortium of Research in Education was designed and created at CASE, MSU, and Vadodara to share the research in education conducted in South Asian Countries, to begin with.

- Also, a Consortium of Research in Education is being designed for Common Wealth Countries for Cross Border Teacher Education.

Development of Info-Savvy Skills

- Asking
- Accessing
- Analyzing
- Applying
- Assessing
- Attempts are being made to develop the info-savvy skills amongst teachers

Development of Techno-Pedagogic Skills

- Attempts have been made to identify and develop the various Techno-Pedagogic Skills, such as,
- Medium Message Compatibility
- Spatial & Temporal Contiguity of various message forms
- Message Credibility & Media Fidelity
- Message Language Proficiency
- Correspondence amongst Source Message Medium Receiver
- Correspondence amongst Scripter Presenter Cameramen Producer
- Suitable View Composition
- Natural Production

Around 50 Techno-pedagogic Skills were developed, such as, mentioned above.

E-Pub Editor

- Many a teacher all over India have been trained on editing employing EPUB, wherein, there is provision to edit audio video and text which can be opened using a suitable EPUB Reader.

- For producing EPUB following could be the syntax:

- Save the document having text and images in web format

- Copy the text document into the SIGIL environment

- Insert Pictures, Audio and Video

- Combine with CSS in the desired format employing HTML background

- Save as EPUB

- Use a suitable EPUB Reader to Read the EPUB.

Evolving a Taxonomy of Educational Skills

- An attempt was made to evolve a Taxonomy of Educational Skills by Prof. Devraj Goel as Emeritus Fellow of UGC for two years at the CASE, MSU, Vadodara.

- Taxonomy of Educational Skill is offered as a course in some of the universities, such as the University of Agra!

Designing & Development of a Hindi Text Editor

- There have been problems with punctuation in the Hindi Text Editors commercially available in the markets.

- Our students developed a Hindi text Editor on their own and named it BHARATI.

Research & Development

- A film- SFAR GHAR SE SCHOOL TAK was produced to facilitate the first transition of children from home to pre-school by one of our Doctoral Scholars, namely, Sucheta Jasrai at CASE.

- An attempt was successfully made for automation of evaluation at the B.C.Ed. Level by one of our doctoral scholars, namely, Sanjay Mahajan, at the SOE, DAVV, Indore.

Disruptive Innovations in Higher Education

- Smartphones (based on Apple Platform IOS, MS Office Windows, Android, Oxygen, Symbian) have taken over Mobiles and Telephones. The frequencies of Facebook, Watts-app, and Twitter are very high. Also, the PHABLETS (Smart Phone+ Tablet) have an appearance.

- MS Office has almost become a need & necessity.

It has many utilities, namely, MS Word, ACCESS, EXCEL, PPT and MS PUB.

- Progressively there is a move from DBMS to RDBMS to Big Data (No SQL).

- There is a conversion from Manual Learning Resources Management System to Computer Based LRMS. In addition to Computer Based LRMS we have Information Library Network (INFLIBNET).

- Evidently it is an era of OERs and MOOCs and now MOLEs (Massive Open Online Learning Experiences).

- F2F degrees to Nano virtual degrees.

- In addition to manual Time Tabling, we have a computer-based Time Space Personnel Management System (TSPMS).

- We have an entire Management Information System Series from Online admissions through TSPM, Digital Education, On Demand Examination, Automated Evaluation, Examination Result Declaration & Degrees & Certification. Also, there are digital facilities to pick, place and promote the Graduates and to keep track of the Alumni.

- There is a perceptible shift from Desk Top to Lap Top to IPADs & Tablets.

- There is a move from point to point network to Wi-Fi.

- There is a move from telecast to webcast.

- There is an evident shift from Chalk Board to White Board to Smart Board.

- There is a shift from OHP to LCD.

- There is an evident focus on info-savvy skills.

- A big volume of Learning Resources is available on WWW & U Tubes.

- Progressively there is a shift from Face to Face Research and Training to Online Research & Training.

- There is a shift from F2F Education to Online Education.

- There is a shift from F2F GURUKUL to VIRTUAL GURUKUL.

- There are fully interconnecting Social Networks.

- There is the live digital transmission of various Educational Events, such as Folk Dance, Role Play, and Educational Film festivals.

- There is an instant data & information flow through digital clouding.

- There is the realization of omnipresence, recency & immediacy through ICT with tremendous speed of electromagnetic waves ($3*10^{10}$ cm/ second).

- There is an immediate shift to e-Publication, deployment & dissemination.

- There is an evident shift to digital citizenship.

- Flipped Classrooms.

- Data Clouding.

- Virtual Classrooms.

- Digital Degrees.

- World on Wheels: Digital Inclusion & Learning Labs.

- Common Service Lab: Offgrid Citizen Assistance Lab.

- Future Classroom 2.0: Offgrid Digital Learning Lab.

- Curricula for ICT in Education & its transaction for Teachers & Learners.

- e-PGPathshala: It is an initiative of the MHRD under National Mission on Education through ICT (NME-ICT). The modules for M.Ed. and M.A. Education are being developed jointly by the University of Allahabad and CIET-NCERT. These modules will be available on the following websites:

- *http://epgp.inflibnet.ac.in*

- *http://eacharya.inflibnet.ac.in*

- *http://nroer.gov.in*

- **MOOCs for PG Students**

- UGC is the National Coordinator for the development of MOOCs for non-technical post-graduate degree programs. CIET, NCERT is developing MOOCs for the subject of Education. The courses developed so far have been hosted on SWAYAM. A learner can earn certificate/ credits on successful completion of any course on SWAYAM.

Technological Support for Learners without Eye Vision

- Job Access With Speech (JAWS)

- Open Book Software

- Talkback

- E- Braille

- Language Software

- Screen Readers

- Voice Recognition

- DAISY (Digital Accessible Information System)

- Non-Visual Desktop Access (NVDA)

Devices for Assisting in Receiving and Responding

- The TLM should be provided in the e-form/ digital format.

- Screen Reader for recording aloud the text format and picture description narration.

- Audio Recording

- Basic phone

- Smartphone

- Stand-alone sound recorder

- Devices for recording the responses in the examination hall.

- The audio message given by the examinee can be captured by a LMS/Exam system as it is in audio form which can be later evaluated by an evaluator.

- The audio signals can be converted into digital text form by LMS/ ES.

- In addition the audio responses can be registered and automatically converted into a digital format by detecting the segments given by the candidate in an interactive 3D virtual reality system.

Technology Pedagogy & Content

- Technology Pedagogy and Contents ought to be interwoven.

- TRACKSKS

- NROER

- OERS

- ZPD: The zone of proximal development (ZPD), also known as the zone of potential development, is a concept often used in classrooms to help students with skill development.

- Netizens

Zone of Proximal Development

- The zone of proximal development (ZPD), also known as the zone of potential development, is a concept often used in classrooms to help students with skill development.

- The core idea of the ZPD is that a more knowledgeable person can enhance a student's learning by guiding them through a task slightly above their ability level.

- As the student becomes more competent, the expert gradually stops helping until the student can perform the skill by themselves.

- The idea of the ZPD came from a Russian psychologist named Lev Vygotsky in the early 1900s. Vygotsky believed that every person has two stages of skill development:

- The idea of the ZPD came from a Russian psychologist named Lev Vygotsky in the early 1900s. Vygotsky believed that every person has two stages of skill development:

- a level they can achieve by themselves

- a level they can achieve with the help of an experienced mentor or teacher

- He referred to the level an individual can achieve with help as their ZPD.

- The idea of pairing instruction with a student is known as scaffolding, which is one of the core concepts of Vygotsky's idea of the ZPD. The person performing the scaffolding can be a teacher, a parent, or even a peer.

- Scaffolding and the ZPD are often used in preschool and elementary classrooms, but the same principles can be applied outside of a school setting.

Participatory Approach to Online Problem Solving

- A teacher assigns a task (say) to develop a Program for computing Coefficient of Concordance employing C++

- The learners online develop their own programs

- Share these programs amongst all the classmates

- Thus, learn programming from each other!

Online Faculty Development Programs (FDPs)

- Various FDPs are being offered using various Apps, such as Google, and Zoom!

- We organized a series of online programs for Research Scholars and Faculty Members all over India as follows:

- Teacher Education in India

- Skill Integrated Teacher Education

- Renewal of Teacher Education

Webinars

- Webinars are being organized all over India on various themes, such as,

- NEP (2020)

- E-learning@ Techno-pedagogic Skills

- Research Methodology

- Employing SPSS for data processing

Online Pedagogies in various Domains of Various disciplines

- Online pedagogies are being employed through the MISS:

- Admission

- TSPM

- Curriculum Transaction

- Evaluation

- Certification

- Convocation

TPACK or KCAPT

- Technology-> Pedagogy-> Content-> Knowledge

- Knowledge of Content-> Pedagogy-> Technology

Alumni Tracking and Pick Place and Promotion

- Innovative applications are being employed in constructing the databases of the Alumni.

- Provisions are made through the RDBMS to pick the place and promote the graduates.

- There is added focus on Hard Skills and Soft Skills, both!

ICT-Aided Constructivist Approaches

- 5e Model-> Engage Explore Explain Elaborate and Evaluate
- 7e Model-> Elicit Engage Explore Explain Elaborate Evaluate and Extend

Pedagogy: Designing & Development

- Teacher Designed Teacher Driven
- Teacher Designed Learner Driven
- Learner Designed Learner Driven

Personalized Teaching Learning

- Zero Lecture Program
- Personalized Learning
- Personalized Teacher Education in Practice at DAVV Indore, Banasthali University and Lucknow University!

Innovative Approaches & Entrepreneurship Skills

- Germination Incubation Creation Construction and Connection
- Designing Development and Implementation of LRMS
- Designing Development and Implementation of TSPMS

Scaffolding Entrepreneurs

- Our Higher Education should produce Entrepreneurs who are not only independent but, are also in a position to provide support to the needy.
- Netizens
- Net Citizens
- Net Culture
- Net Topologies
- Bandwidth & Speed
- Information and Communication Technologies
- Info-Savvy
- Net-Savvy

Twenty-Eight Digital Initiatives of Government of India in Higher Education

1. SWAYAM
2. SWAYAM PRABHA
3. National Academic Depository (NAD)
4. National Digital Library of India (NDL India)
5. E-Shodh Sindhu (eSS)
6. Virtual Labs
7. e- YANTRA
8. Talk to a Teacher Program
9. E- acharya
10. E- Kalpa
11. FOSSEE- Free/Libre and Open Source Software in Education
12. Vidwan
13. Spoken Tutorial
14. BAADAL
15. Global Initiative of Academic Networks (GIAN)
16. National Institutional Ranking Framework (NIRF)
17. IMPRINT (IMPacting Research Innovation and Technology)
18. SAKSHAT (A One Stop Educational Portal)
19. Atal Ranking of Institutions on Innovation Achievements (ARIIA)
20. Know Your College
21. DigiLocker
22. The National Programme on Technology Enhanced Learning (NPTEL)
23. OSCAR (Open Source Courseware Animations Repository)
24. ShodhGangotri
25. Virtual Learning Environment
26. Text Transcription of Video Content
27. SOS Tools
28. e-PG PATHSHALA

    https://lisportal.com/en/lis-blogss/3720-digital-initiative-of-govt-of-india-in-higher-education

Concluding Remarks

The NEP (2020) has the vision and mission to nurture the legacies and trans-create the ancient *Sanatan Sanskruti*, which is, *Nit Nootan* and *Chir Puratan!* But, the evident issues are how to bridge the gaps between idealism and realism. How to nurture online pedagogies? Massive Open Online Courses are desirable, but, how to establish their characteristics for the masses? There ought to be a reversal of TPACKs. How the interweaving of the contents, pedagogy and technology be realized? What should be the structure of study webs for the young aspiring minds? Where should be the origin and how should be the flow of *Shodhganga*? How the innovative applications of online pedagogies can establish their own testimony? The ultimate aim of Education is the development of Universal beings. All the Convocations ought to be with an invocation. The Doctor of Philosophy irrespective of the discipline ought to be VIDYA VACHASPATI whose Text has its own Testimony. The D.Lit. , that is, VIDYA VARIDHI ought to have in-depth knowledge. Let us employ any mode Face to Face, e-learning, or blended, but, our pedagogies ought to have their own testimony. We ought to invest in education and respect education. The UPSC should introduce Indian Education Service (IES). The UGC may insist on Two Research Articles, but, not on their publication. It is because many publishers have started exploiting the Research Scholars by charging publication fees. There are undue delays in publications. It is high time that we switch over to e-publications. An infinite listing of the e- pedagogies and programs will not help unless their intent substance characteristics and grammar are realized! ❑

Guidelines for Contributors

To submit the manuscripts for publication of articles, the contributors need to follow the guidelines given below:

A. Articles submitted for the Journal should be original contributions and should not be under consideration for any other publication at the same time. A declaration is to be made by the author in the covering letter that the paper is original and has not been published or submitted for publication elsewhere.

B. Manuscripts including tables, figures and references should be around 3000-4000 words for articles, 2000 – 5000 words for Convocation Addresses, 1000 words for Book Reviews and 600 words for Communications.

C. All the manuscripts should typed in double-space with 12 point font and ample margin on all sides on A 4 size paper.

D. The cover page should contain the title of the paper, name, designation, official address, address for correspondence, contact phone/mobile numbers and e-mail address of all the authors.

E. One author should be designated as the corresponding author.

F. Notes, if any, should be given as Endnotes not as Footnotes.

G. Figures include relevant captions, tables include titles, description, source etc.

H. Figures and table citations in the text match the files provided

I. Manuscript has been 'spell checked' and 'grammar checked'

J. References should be given at the end of the manuscript and should contain only those cited in the text of the manuscript. The full reference should be listed at the end in alphabetical order running the following style:

- **Books**

  Miles, M., and Huberman, M., (1994). Qualitative Data Analysis. London: Sage.

- **Articles**

  Over, R.(1982). Does research productivity decline with age?

  Higher Education, 11, 511-20.

- **Chapter in a Book**

  Rendel, M. (1986). How many women academics 1912-1977? In R. Deem (ed.), Schooling for Women's Work. London: Routledge.

- **Article Retrieved from Website**

  Mazumdar, T (Year, Month, Date Published). Article Title. Retrieved from URL.

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Need for Wise Decisions to Make Right Choices for Better Outcomes

Falguni Nayar, Founder and CEO, Nykaa delivered the Convocation Address at the 57th Annual Convocation Ceremony of the Indian Institute of Management Ahmedabad, Gujarat on April 13, 2022. She said, "Commit yourself to what you want to do and be consistent in the wake of the challenges that come your way. The journey will never be smooth; Take the roller coaster ride in your stride, the highs should not make you arrogant and the lows should not get to you. You don't have to aim for perfection before leaping into something. Fail fast, learn from your mistakes, and remember that failure and setbacks are not an "if" but a "when" question. Don't let setbacks dishearten you, and definitely don't let failures make you give up. You will only be able to commit and see something to its success if it ignites a passion within you, and that's why it's so important to dream for yourself. It will be a long journey, hence, patience and consistency are required, but most importantly believe in your dream and stick to it." Excerpts

Chairman of the Board, Mr. Birla, Director of the Institute, Mr. Errol D'Souza, Members of the Board of Governors, Members of the faculty, proud parents, families, and the graduating class of 2022.

Being here today has brought back so many memories and has transported me right back to my own years on this campus. It was truly a wonderful time and life defining two years. I don't think it's an understatement when I say life has now officially come 'full circle' for me. This school, this campus means a lot to me, it gave me a worldview of my own, a jumpstart in my career, a deep understanding of what makes businesses tick, the ability to work under pressure and on a more personal front, friendships that have lasted till date, a strong and connected network and maybe the biggest personal takeaway was that I got a study partner who eventually became my life partner. To this day, I continue to hold many dear memories from my years on this campus. I urge you all to cherish the days you have had here as well, such experiences will now be far and few between.

It's my absolute privilege to be speaking to the graduating class of 2022. With the little time that I have, I would love to pass on a few messages from all that I have learnt over the years.

I would urge each of you to pause and think about why you are doing what you're doing. Are you living the dreams of your parents? Are you working towards a goal because that is the goal expected of you to achieve? It's very critical for you to genuinely understand what your dream truly is and then pursue it, no matter what. Whether it's the road less travelled or not, take the path that 'you' want to take. What works for someone else, may not necessarily be the right choice for you.

I saw that with my batchmate Harsha Bhogle and he never regretted it. For me personally I can assure you that in 2012 when I decided to take the plunge into entrepreneurship and told people that I wanted to quit investment banking and start a beauty focused start-up, it was no one's dream but mine and mine alone.

For me, it was the right time to focus and channel all my energies into finding my niche. I did my best to not be afraid of the unknown - building Nykaa meant entering a space at the intersection of beauty and technology - all completely new to me at the time. This idea of doing what's right by 'you' was the inspiration for the name Nykaa itself, which comes from the Sanskrit word 'Nayaka' and is inspired by a message to all that one must pursue their dreams and shine the spotlight in their lives. Decide what makes you happy and make choices that will allow you to achieve your goals. Today, I feel so proud to call Nykaa my home and this has been one of the most fulfilling journeys of my life. So, do what you love and that would motivate you for decades to come.

But only dreaming for yourself is not enough and this takes me to two related pieces of advice; First, commit to your dream. Nothing in life comes easy, you will have to give it your all, and then some more, to succeed – be it at work or otherwise, whatever you decide to prioritize in your life. Commit yourself to what you want to do and be consistent in the wake of the challenges that come your way. The journey will never be smooth; Take the roller coaster ride in your stride, the highs should not make you arrogant and the lows should not get to you. You don't have to aim for perfection before leaping into something. Fail fast, learn from your mistakes and remember that failure and setbacks are

not an "if" but a "when" question. Don't let setbacks dishearten you, and definitely don't let failures make you give up. You will only be able to commit and see something to its success if it ignites a passion within you, and that's why it's so important to dream for yourself. It will be a long journey, hence, patience and consistency is required, but most importantly believe in your dream and stick to it.

Second, don't be afraid to take risks along the way. You are blessed to be entering a world which is now increasingly risk-friendly. Spend the early years of your career taking the right risks and make some bold bets on yourself. Test what you like and what you don't. Take on roles that put you outside of your comfort zone and challenge yourself. Discover new interests and hone on skills you excel at. You don't need to have all the answers today about what you want from life but you do have the benefit of low opportunity cost in your current phase of life so make the best of it. And remember, no matter what anyone says, it is never too late to start all over again. Decision making will not always be easy, and often there will be no straightforward answer. So, trust your gut to an extent, it will guide you well.

There's a poem by C.P. Cavafy, called "Ithaka", which my daughter introduced me to when I was unsure of taking the plunge into entrepreneurship. And I've referred to it often since, to remember why I'm on this journey to begin with. I would like to share a small part of it with you all;

"Keep Ithaka always in your mind.
Arriving there is what you're destined for.
But don't hurry the journey at all.
Better if it lasts for years,
so you're old by the time you reach the island,
wealthy with all you've gained on the way, not
expecting Ithaka to make you rich."

I urge you all to read this poem when you get the time. The journey you are about to embark on as you step out of this campus should be reason enough to pursue your dream, and you will quickly realise it was never about the destination.

I want to share a life philosophy with you which is on very similar lines and I picked it up right on this campus. Sanjay, my husband, has always been a big believer of the Bhagwat Gita and I've ended up taking many learnings from it over the years but there is one

that has really stuck with me. I'll read out the Sanskrit shloka and then try to translate it;

"Karmanye vadhikaraste Ma Phaleshu Kadachana" which roughly translates to "You have the right to work only, but never to its fruits." What it means is detach work from rewards and the appropriate rewards will come over time. Karma karo, phal ki ichha mat rakho.

I'm sure because of the place you are in today there's a certain expectation on how well you need to do in life - pressure from your peers, pressure from friends and family, pressure in school or the real world - the need to get into the most sought after companies, to work abroad, to chase the most well-paying jobs etc. etc. - this pressure will put you on a treadmill which is just not worth it.

I'm sure because of the place you are in today there's a certain expectation on how well you need to do in life - pressure from your peers, pressure from friends and family, pressure in school or the real world - the need to get into the most sought after companies, to work abroad, to chase the most well-paying jobs etc. etc. - this pressure will put you on a treadmill which is just not worth it.

So, focus on doing your work right and bring hard work and attention to detail center stage. Solve problems which others can't solve. And it has got less to do with the fact that you are from IIM-A and more to do with the fact that your company believes that you can do it. Don't let them down. You are expected to have the stamina and exposure to take on challenges that many cannot. Over the last two years, you have been trained to imagine scenarios and risks before they happen.

You are all entering a business environment that is very different from the one that existed before you started this journey. In fact, digital transformation has been changing the world at a pace we haven't seen before. Whatever career path you may choose, it has most likely witnessed disruption or is at the brink of it. And we can expect this to just increase with time. It's important not just for businesses – but more so for people, to be and remain agile. Your formal education might now be over but you must inculcate the habit of lifelong learning. I spent over 20 years with Kotak, where I wore multiple hats over the course of my career and leaned in with every new role. Each experience during that period taught me a lot. I switched from

banking to Nykaa at the age of 50, with no prior experience in technology, beauty, fashion or retail. Don't be afraid of change, instead embrace it. Prepare for it. Build yourself for new challenges.

But do remember, grit, agility, attention to detail – all this can only take you so far without EQ. You are all clearly very bright and determined, just the fact that you got admitted to IIM- A and have made it out the other side, speaks to your hard work and ability to persevere. But do keep in mind that in the early years of your career you may be able to thrive solely on a combination of hard work and intelligence. But you will quickly reach a point in your career where your understanding of people, ability to manage people and lead with empathy, and most importantly ability to invest and grow people, will be a very big factor to your and your teams' success. At Nykaa, we often talk about being a 'coordinated dance'. I assure you no one's success is theirs alone and requires a whole village to come together to create something meaningful.

I want to come back to the importance of dreaming for oneself because I want to take a minute to speak specifically to the women sitting in front of me. People often tell us from a young age how to act, how to be, and specifically in the context of work - whether we should work, what we should do, and what we shouldn't. That conditioning from a young age can really affect how we think about our own dreams. I was personally blessed to have people around me - my parents, friends - and later in life, my husband and my kids - who were not just supportive of my choices, but encouraged me to choose for myself. I would urge you to truly apply yourself, break from conditioning if any, to find and pursue your dreams. Because once you do that, I am confident there's no roadblock you can't overcome.

I believe you are all graduating at a time in India unimaginable maybe even a decade ago. You are entering a world of opportunities and the landscape of options you have is more diverse than ever. The technology space and the start-up environment in the country has evolved to the point of becoming truly mainstream. Everyday, there are new innovative solutions being built which can solve true business problems. The leaders of tomorrow will come from this group right in front of me and I'm beyond excited to see how you all will shape the next two decades in the business arena.

My one last piece of advice to you, which is honestly easier said than done, but I promise you, is totally worth it – act with integrity and do the right thing. Be authentic in all your relationships – work or otherwise, act in everyone's best interest and simply be good. It will pay off over time.

With that, congratulations to all of you. Enjoy this moment, it's very well deserved. But remember, life begins again tomorrow, right from scratch. Thank you and best of luck. ❑

CAMPUS NEWS

International Congress on Reimagining the World

A three-day Multidisciplinary International Congress *'Sanmantrana'* on the theme 'Reimagining the World: Transforming Challenges into Opportunities' was organized by Shri Vaishnav Vidyapeeth Vishwavidyalaya (SVVV), Indore, partially sponsored by St. Cloud State University, Minnesota, USA, recently. The Congress witnessed 97 registered delegates. The total number of papers received was seventy-eight out of which fifty-eight papers were presented in different technical sessions. In addition to this, constituent Institutions of the University conducted 24 workshops on different themes in the area of Computer Science, Engineering, Information Technology, Agriculture, Management, Science, Forensic Science, Architecture, Social Sciences, Humanities, Arts, Mass Communication, and Journalism.

The Congress was inaugurated by Dr. Robbyn Wacker, President, St. Cloud State University, Minnesota with the lighting of the holy lamp and invoking the blessings of Goddess Saraswati. In her inaugural address, Dr. Robbyn Wacker emphasized adapting to changes and challenges and fostering an organizational mindset to cultivate a culture of innovation and risk-taking.

Dr. Upinder Dhar, Vice Chancellor of SVVV, delivered the welcome address and thanked St. Cloud State University, USA, for its unwavering support in organising *Sanmantrana* since 2017. He highlighted the disruption due to COVID-19 and talked about the technology advancement and digital connectivity that has spelled innovation in business models, business networking, international markets, and knowledge transfer. In his opening remarks, Ar. Vishal Yardi, Congress Chairperson, introduced the Congress to the gathering and highlighted the challenges of reimagining the world.

Shri Purushottam Das Ji Pasasri, Congress Chief Patron and Chancellor talked about the contribution of the Shri Vaishnav Trust in the areas of education, medical, and other philanthropic services for the last 138 years. Special Guest, Dr Ben Baliga, Graduate Director, St Cloud State University, USA,

introduced St. Cloud State University, the USA to the gathering. He shared information about faculty-student exchange programmes between both universities and the funding opportunities available for SVVV students.

Prastavna-2022 Congress Souvenir on 'Reimagining the World: Transforming Challenges into Opportunities' was released by the Chief Guest, Dr. Robbyn Wacker. The dignitaries also released a brochure for *Sanmantrana-2023.* The Vote *of* Thanks was proposed by Shri Kamal Narayan Bhuradiya, Secretary, Shri Vaishnav Vidyapeeth Trust, SVVV. Ms. Samiksha Bhatt was the Organizing Secretary of the Congress. The Master of the Inaugural Ceremony was Dr. Anu Ukande. Dr. Shobha Jain, Associate Professor, SVIS, SVVV, Indore and Dr. Namrata Jain, Associate Professor, SVSM, SVVV, Indore were the rapporteurs for the inaugural session.

The speakers of the Plenary Session-I were Dr. Sheeba Valsson, Former Professor and Principal of Shri Datta Meghe College of Architecture, Nagpur; Dr. G Ananthapadmanabhan, Practice Leader, IBM Analytics Solutions and Dr. Neelesh Kumar Jain, Director (Officiating), Indian Institute of Technology, Indore. Dr. Namit Gupta, Director, SVITS, SVVV, Indore and Dr. Ashutosh Shukla, Head, Department of Chemistry, SVIS, SVVV, Indore were the chairpersons of the session.

Dr. Sheeba Valsson discussed the importance of adapting to the changes with a new design innovation in domestic and hospitality buildings. Dr. G Ananthpadmanabhan shared those situations lead to the development of a person in terms of technology. Dr. Neelesh Kumar Jain emphasized that technology updates students as well as helps to save the environment. The rapporteurs of the session were Dr. Monica Saini, Associate Professor, Shri Vaishnav School of Management (SVSM), SVVV, Indore and Ar. Navajyothi Subhedar, Associate Professor, Shri Vaishnav Institute of Architecture (SVIA), SVVV, Indore.

The Concurrent Technical Sessions

The following four concurrent technical

sessions for Architecture, Science, Engineering and Management were conducted during Plenary Session-I.

Architecture

The technical session on Architecture was chaired by Dr. Shubhda Kamlapurkar, Professor, BNCA, Pune and Dr. Shruti Tiwari, Head of Design, Renaissance University, Indore. All eleven papers were presented during the session. These papers were in the area of Architecture, Urban Planning and Planning. The rapporteurs of the session were Mr. Sudhanshu Dubey, Associate Professor, SVITS, SVVV, Indore and Dr. Swati Sharma, Associate Professor, SVSM, SVVV, Indore. Ms. Ritika Sharma, Assistant Professor, SVISSHA, SVVV, Indore assisted in preparing the record for paper presenters.

Science/Mathematics

The technical session on Science/Mathematics was chaired by Dr. Shri Prakash Pandey, Professor, Department of Physics, Teerthankar Mahaveer University, Muradabad and Dr. Uttam Sharma, Head, Department of Physics, Shri Vaishnav Institute of Science (SVIS), SVVV, Indore. All five papers were presented during the session. These papers were in Physics, Home Science and Agriculture. Dr Suprajnya Thakur, Associate Professor, SVIS, SVVV, Indore and Dr Rishu Roy, Associate Professor, Shri Vaishnav School of Management (SVSM), SVVV, Indore were the rapporteurs. Ms. Jaya Sharma, Assistant Professor, SVITS, SVVV, Indore assisted in preparing the record for paper presenters.

Engineering/Computers

The technical session on Engineering/Computers was chaired by Dr. S M Narulkar, Professor, SGSITS, Indore and Dr. Jigyasu Dubey, Head, Department of IT, Shri Vaishnav Institute of Information Technology (SVIIT), SVVV, Indore. All eight papers were presented during the session. These papers were on Civil Engineering, Information Technology and Computer Application. Dr Satish Shukla, Associate Professor, SVITS, SVVV, Indore and Dr Roopa Shinde Associate Professor, Shri Vaishnav Institute of Social Science, Humanities and Arts (SVISSHA), SVVV, Indore were the rapporteurs. The record of the paper presenter was prepared by Ms. Mansi Trivedi, Assistant Professor, SVSL, SVVV, Indore.

Management

The technical session on Management was chaired by Dr. George Thomas, Director, SVIM, Indore and Dr. T K Mandal, Professor, SVSM, SVVV, Indore. All seven papers were presented during the session. These papers were on Management, English literature and Humanities. Dr Pragya Jaroliya, Associate Professor, SVSM, SVVV, Indore and Dr Shri Ram Patel, Associate Professor, SVSL, SVVV, Indore were the rapporteurs. The record of the paper presenter was prepared by Ms. Alka Jha, Assistant Professor, Shri Vaishnav Institute of Fine Arts (SVIFA), SVVV, Indore.

During Plenary Session-II, the speakers were Dr. Joydeep Ghosh, Professor, Institute for Plasma Research, Gandhi Nagar; Dr. Milind Ahire, Associate Dean, Punyashlok Ahilya Holkar College of Agriculture, Halgaon and Dr. Sain Dass, Former Director, Directorate of Maize Research (DMR). Dr. K N Guruprasad, Director, SVIS, SVVV, Indore and Prof. Vinod Dhar, Head Center of Vocational studies, SVIAG, SVVV, Indore. Dr. Joydeep Ghosh shared about Nuclear Fission and the advantages of plasma coating on graphite tiles for the future; Dr. Milind Ahire asserted the different career opportunities in agriculture and Dr. Sain Dass emphasized the different government projects of agriculture to grow cereals with minimum water resources. The role of reporters was fulfilled by Dr. Anuraag Joshi, Associate Professor, SVISSHA, SVVV, Indore and Dr. P K Sharma, Associate Professor, SVIS, SVVV, Indore.

The Concurrent Technical Sessions

The following three concurrent technical sessions for Architecture, Science, Engineering and Management were conducted during Plenary Session-II.

Architecture

The session was chaired by Prof. Hemant Kaushik, Professor, Avantika University, Ujjain and Dr. Harsimran Chadha, Former Principal, Govt. Women's Polytechnic College, Indore. In the session, six papers were presented. The papers were in the area of Architecture, Design and Planning. Rapporteurs of the session were Dr Pragati Tomar, Associate Professor, SVSM, SVVV, Indore and Dr. Anand Babu, Associate Professor, SVITS, SVVV, Indore. Ms. Rani Singh, Assistant Professor, SVIIT,

SVVV, Indore assisted in maintaining the record of paper presenters.

Science

The Science session was chaired by Dr. Damodar Prabhu, Adjunct Professor and Former Head, Department of Chemistry, Wilson College and Dr. Harsh Sharma Former Director, State Forensic Science Laboratory, Sagar. In the session, thirteen papers were presented in the Chemistry, Forensic Science and Microbiology discipline. Dr Swati Dubey Mishra, Associate Professor, SVIFS, SVVV, Indore and Dr Shrikant Pandey, Associate Professor, SVITS, SVVV, Indore were the rapporteurs of the session. Record of Paper Presenters was prepared by Ms. Nikita Dubey, Assistant Professor, SVIS, SVVV, Indore.

Engineering

In the Engineering session, Dr. Shishir Jain, Professor, SVIS, SVVV, Indore and Dr. M.P. Gautam, Professor, SVIFS, SVVV, Indore joined as Chairpersons. In the session, eight papers were presented in the Civil Engineering and Computer Application discipline. Rapporteurs of the session were Dr. Raksha Chouhan, Associate Professor, SVICA, SVVV, Indore and Mr. T.K. Sinha, Associate Professor, SVITS, SVVV, Indore while the record of paper presented in the session was handled by Ms. Sheuli Sarkar, Assistant Professor, SVISSHA, SVVV, Indore.

During plenary session-III, the speakers of the session were. K K Pathak, Professor Emeritus, Department of Civil Engineering, IIT (BHU) Varanasi; Dr. S Suryaprakash, Vice Chancellor, DSNLU, Vishakhapatnam; Dr. A K Kapoor, Professor and former Head, Anthropology Department, University of Delhi and Dr. S S Prasada Rao, Professor, Management, Sharda University, Greater Noida. Dr. K K Pathak discussed affordable housing, green buildings and material quality. Dr. S Surprakash shared his thought on illegal immigrants, especially on Rohingyas, the different parties involved, and their effect on National Securities. Dr. A K Kapoor asserted the impact of emerging technologies on Forensic Science and different cases of the emergence of the Forensic Science Course in India and Dr. S S Parasada Rao emphasized the challenges for higher education like undesirable reforms, unexpected things like pandemics, paid

journals, etc. The chairpersons of the session were Dr. Anand Rajavat, Director, SVIIT, SVVV, Indore and Dr. G H Naidu, Head of Library, SVVV, Indore. The rapporteurs of the session were Dr. Saurabh Jain, Head, SVICA, SVVV, Indore and Dr. Abhishek Singh Rathore, Associate Professor, SVIIT, SVVV, Indore.

Dr. Upinder Dhar, Vice Chancellor congratulated the entire team of *Sanmantrana-2022* for the successful conduction of the Congress. Ms. Samiksha Bhatt, Organizing Secretary, presented the report of the three-day Congress followed by feedback from the participants. The Vote of Thanks was proposed by Ar. Vishal Yardi, Congress Chairperson. The Master of Valedictory Ceremony was Ar. Ayushi Jhurani, Assistant Professor, SVIA, SVVV, Indore and Rapporteurs were Dr. Saurabh Sharma, Associate Professor, SVIIT, SVVV, Indore and Dr. Anand Singh Rajawat, Associate Professor, SVIIT, SVVV, Indore. The Congress ended with the National Anthem.

National Conference on Applicability of Fundamental Principles of Ayurveda

A two-day National Conference on 'Applicability of Fundamental Principles of Ayurveda to Design Future Global Health Management Strategies' is being organized by the Department of Siddhant Darshan, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University Varanasi during August 07-08, 2022. The aim of the event is to provide a platform for the emergence of newer ideas in the fields of Ayurveda basic principles in its evolution to better understanding and utilization, using newer methods, tools, and technologies. It is going to unite the capacity of young researchers all across the national Ayurvedic Colleges in India as Postgraduates and Ph.D. to participate and make their scientific temperament evident and propagated. The Subthemes of the event are:

- New Education Policy in Perspective to Ayurvedic Education.

- Interventional Tools and Techniques in the Exploration of Ayurvedic Principles and Treatment.

- Identification of Ayurvedic Principles in the Development of Health Policy.

- Relevance of Fundamental Principles of Ayurveda in the Current Era.
- Transliteration and Applicability of Fundamental Ayurvedic Principles in Health Care Management of Modern Society.
- Practical Applicability of Fundamental Principles in the Management of Diseases.
- Applied Principles of Yoga in Management of Health and Diseases.
- Applied Principles in Relation to the Drug Application.
- Fundamental Principles Related to Pathogenesis (*samprapti*) of Diseases.
- Principles of Ayurveda and Contemporary Sciences.
- Fundamental Principles of Ayurveda and Sada Darshan (Indian Philosophy).
- Relationship between Ayurveda, Arts, and Humanities.

For further details, contact, Organising Secretary, Dr Devanand Upadhyay, Department of Siddhant Darshan, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi–221005 (Uttar Pradesh), Mobile No: 09936441244, 08318343051, E-mail: *ayurbasicon2022@gmail.com.* For updates, log on to: *https://www.bhu.ac.in/ims/events.*

Management Development Programme on Business Analytics

A four-day Management Development Programme on 'Business Analytics for Management Decision' is being organized by the Vinod Gupta School of Management, Indian Institute of Technology Kharagpur West Bengal during December 01-04, 2022. The corporates, executives, and academicians may participate in the event.

Data Analytics, an important branch in mathematical sciences, is very vibrant today for all professionals, including researchers, engineers, managers, and analysts. The business environment is very dynamic today, especially with reference to the abundance of information and multidisciplinary research. So, it is a huge opportunity and challenge for the decision-maker to analyze this information and bring some meaningful decisions to the business prerequisite. With the accessibility of various tools, techniques, and user-friendly statistical/mathematical software, the ability to analyse a large amount of data is not only desirable but a necessity for many professionals. Such techniques and software are usually very complex and confusing for the uninitiated. There are several issues in this process like the selection of appropriate technique, selection of right software, interpretation of results, and so forth. The Topics of the event are:

- Introduction to Analytics.
- Descriptive Analytics.
- Inferential Analytics.
- Predictive Analytics.
- Prescriptive Analytics.
- Decision Analytics.

For further details, contact Course Coordinator, Prof. Rudra P. Pradhan, Vinod Gupta School of Management, Indian Institute of Technology Kharagpur, West Bengal-721 302, Phone No: +91 3222 282316/ 282317, Mobile No: +91 9733742104, E-mail: *rudrap@vgsom.iitkgp.ac.in* and *pradhanrp@gmail.com.* For updates, log on to: *https://som.iitkgp.ac.in/event.*

International Conference on Advances in Material Science and Technology

A two-day International Conference on 'Advances in Material Science and Technology' is being organized by the School of Mechanical Engineering under the aegis of Lovely Professional University, Phagwara, Punjab from September 16-17, 2022.

Material Science and Technology plays an important role in sustainable development in various applications in the field of mechanical, aerospace, automobile, marine, mechatronics, and many more. The event aims to provide a premier arena for discussing innovative research contributions and practical breakthroughs in the field of Materials Science and Technology in order to contribute to technological progress for the nation. The Topics of the event are:

- Composite and Polymer Manufacturing.
- Material Testing.
- Fabrication Process of Nanomaterials and Nanodevices.

- Advanced Machining Processes.
- Alternate Materials /Material Substitution.
- Metallography.
- Smart Materials.
- Experimentation and Optimization.
- Simulation Techniques.
- Green Composites.
- Material Characterization.
- High Strain Rate Deformation of Materials.
- Bio-materials.
- Vibration Analysis and Control.
- MEMS Integration.
- Thermal Properties.
- Advanced Metal Forming, Bending, Welding and Casting Techniques.
- Applications FEA.
- Composites, Intermetallics.
- Aerospace Applications.

- Heat Treatment.
- Non-destructive Examination.
- Meta Materials.
- Laser-based Manufacturing.
- Powder Metallurgy and Ceramic Forming.
- Sustainable Materials.
- Super Alloys.
- Thermally-enhanced Processes and Materials.
- Functionally Graded Materials.
- Recycling and Re-manufacturing of Materials and Components.
- Energy Management.

For further details, contact Organizing Secretary, Dr. Vishal Francis, Assistant Professor, School of Mechanical Engineering, Lovely Professional University, Phagwara-144411(Punjab), Phone No: +91 9565560619, E-mail: *vishal.24813@lpu.co.in.* For updates, log on to: *https://www.lpu.in/event.* ❑

Correction

The name of the Reviewer was wrongly mentioned as 'Srinivas Saidapur' in the Book Review published in the University News, Vol 60, No 27 dated 4-10 July, 2022 on the Book *'Remodeling the Universities: Meeting Challenges of the 21st Century'* authored by Prof Srinivas Saidapur whereas the Reviewer was Prof P S Jayaramu, Former Professor, Political Science, and former Dean, Faculty of Arts, Bangalore University, Bengaluru.

The Book Review with the Reviewer's correct name is being published in this Issue.

Book Review

The Elixir of Experience: A Must Grab

P S Jayaramu*

The book *Remodeling the Universities: Meeting Challenges of the 21st Century* is not just another simple addition to the publications on higher education but it is the essence of the author's long years of experience and contribution to the field of higher education. The Author, Srinivas K. Saidapur is a well-known Scientist, Thinker, and Educational Administrator, having served Karnatak University, Dharwad, as a Professor of Zoology and Vice Chancellor. He is the recipient of many prestigious awards including the 'Shanti Swarup Bhatnagar Prize given by the Hon'ble Prime Minister of India.

The book begins with a run-up on the historical sketch of Indian universities, (Chapter 1) with an apt quote from Jawaharlal Nehru where, who said: "A university stands for humanism, for tolerance, for reason, for the adventure of ideas and for the search for the truth...if the universities discharge their duties adequately, then it is well with the nation and the people" (P.1, emphasis added). Sage words from Nehru are very relevant to the times we live in. Saidapur dwells on the *Gurukul* system in ancient India, advances in the field of education in places like Nalanda and Takshashila, and the universal contributions of Kautilya's Arthashastra, the Ayurvedic systems of medicine, to recall only a few, before the introduction of English by Lord Macaulay. Saidapur rightly avers the selfish and cultural motives with which English education was introduced, ie, to serve the English masters as clerks and assimilate their cultural ethos and values. But, many of the recipients of English education could also enter the ICS as administrators, something the colonial masters could not prevent.

* *Former Professor, Political Science and former Dean, Faculty of Arts, Bangalore University, Bengaluru. E-mail: psjayaramu@gmail.com*

At a more serious level, the author refers to the educational reforms recommended by Dr. S. Radhakrishnan, whose ideas influenced the subsequent Educational Commissions headed by Dr. D S. Kothari, Dr. Yashpal, and lately Dr. Kasturirangan who chaired the Committee to draft NEP–2020. Saidapur affirms that the Radhakrishnan and Kothari Commission reports should have been implemented fully and introspected periodically (P.9) to give a sense of direction to higher education in India.

Saidapur raises very pertinent questions like what are the basic objectives of a university and points out that thinkers like Sri. Aurobindo, Vivekananda, and Rabindranath Tagore expounded their views which were also reflected by Nehru and Nelson Mandela in South Africa, who said 'collapse of education is the collapse of a nation'. (P.12) The Introductory Chapter is rightly summed up by cautioning the higher educational institutions (HEIs) that it is high time to study and analyse the rise and fall of universities in India and grapple with the complex problems arising out of globalisation and the changing demographic picture of the country (P. 20).

In the author's scheme of things 'Leadership and Governance' play a key role in the functioning of universities- the subject matter of chapter 2. He takes a broader view that the process of management of societies and nations depends on the quality of human resources and that universities bear the sole responsibility for producing the right resource. By delivering quality education in diverse fields ranging from science and technology to legal education and foreign affairs, to the inculcation of moral and ethical values, universities play a cardinal role. To perform this gigantic task, universities must have the appropriate leaders as Vice Chancellors supported by Registrars in charge of academic evaluation

and supporting structures like the Governing / Executive Council/ Syndicate, Academic Council, and other related agencies/ institutions. The author lays stress on the appointment of visionaries as Vice Chancellors. He bemoans the sorry state of affairs by frankly stating that many sitting vice Chancellors of state universities are subservient to the prevailing governments and Chancellors (P.28) and that many of them are being appointed as Chairpersons of Search Committees to recommend the panel of names for the appointment of their counterparts. He disapproves of the system of inviting applications, and the role of lobbying in appointments of Vice Chancellors and recommends governments inviting worthy persons to such positions. Saidapur also calls for evolving proper guidelines for Search Committees. In any case, under the NEP, the appointment of Vice Chancellors is going to be hopefully taken away from the hands of governments and vested with a body/ Council consisting of eminent academicians. His suggestion for the position of Pro- Vice-Chancellors/ Rectors is well taken, but that calls for amending the Acts passed by State Governments.

Saidapur's suggestions regarding the constitution of Boards of Studies, recruitment of faculty, and his plea for digital libraries with appropriate physical and digital infrastructure are worthy of implementation. I cannot agree with him more when he recalls the names of Sir. Ashutosh Mukherjee, Madan Mohan Malavia, Dr. Radhakrishnan provided illustrious leadership to the universities they headed. Can and will Indian universities return to such golden age? Saidapur provides numerous ideas on streamlining administration through delegation of powers and evolving user-friendly guidelines for the operation of grants and so on.

Management of financial resources is discussed in chapter 3. Saidapur laments the financial crunch faced by State and Central Universities and runs through the sources of universities' revenue. Reference is made to the funding received under the RUSA scheme. The creation of a corpus fund idea is good. His suggestion for universities to establish linkages with industries is to be pursued vigorously. But, industries too have their own demands and make their own appraisals before committing funds. Universities should also tap their prominent alumnies--internally and abroad--for funds for augmenting infrastructural facilities and creation of chairs etc.

Regarding 'Curriculum Preparation', the author lays emphasis on contextualising the contents and delivery. (Chapter 4). In the context of the NEP, his stress on the creation of Schools across Disciplines ranging from hard Sciences to Humanities and Social Sciences as well as providing flexibility of choices to students is appropriate. Involvement of experts in joint Boards of Studies, if necessary, and industry representatives in the drafting of the curriculum in various disciplines will be of great utility. The suggestion for creating faculty positions to sustain new and existing courses, redesigning classrooms, and preparation of textbooks and manuals are praiseworthy. But the sad reality is that more than 50 percent of faculty positions in State and Central universities are vacant and governments are not sanctioning universities to fill up positions, forcing them to rely on guest faculty who lack commitment. Equally crucial is the author's call for the promotion of germane research (chapter 5). In addition to the creation of Adjunct and Visiting Professors and the promotion of linkages and collaborations, the author's emphasis on the practice of professional ethics is to be lauded. The author could have made a brief reference to the fact that Indian academicians are often found lagging behind in global publications and surveys, both in terms of quantity and quality.

Management of Constituent and Affiliated Colleges is reflected upon in Chapter 6. The author suggests that the Constituent Colleges run by the universities must transform themselves into model colleges from which the other colleges in the region can learn. His ideas are note-worthy. Under the NEP 2020, the system of affiliation is likely to be phased out in the coming fifteen years or so. But, several states are yet to accept and implement the NEP-2020. In any case, the affiliation system is likely to prevail for quite some time. Nevertheless, as the author hopes, the Constituent Colleges must strive to provide leadership to other institutions in the region.

Saidapur's concern for quality drives him to make a strong plea for 'Repurposing the Centres of Human Resource Development, (HRDCs) in Chapter 7. He is right in saying that HRDCs have a key role in implementing the NEP–2020 (P.104 plus). Recharge programs for senior faculty are also necessary for the opinion of this reviewer, in addition to reformatting the 'Orientation Programmes' and 'Refresher Courses' for junior and middle-level faculty.

The role of State Higher Education Councils (SHECs) and Assessment and Accreditation of Universities are dealt with in great detail in Chapters 8 & 9 respectively. Given his long years of experience as a Professor and Vice-Chancellor, the author strongly pleads for SHECs to play a role in empowering HEIs to improve their governance, and academic programmes and in ushering in various academic reforms. His suggestion for annual reviews of SHECs by experts drawn from an all-India panel (P.125) is significant. As regards assessment and accreditation, the author calls for new paradigms of assessment of HEIs in view of the changing global scenario. It is gratifying to note that NAAC has recently brought out a draft white paper in this regard, eliciting stakeholders' responses. The author's suggestions are worthy of being incorporated.

In the concluding Chapter 10, the author underlines the need for universities striving to bridge the urban-rural divide prevalent in our higher education institutions. He makes a strong plea for academic freedom and commitment of faculty in an environment free-from political interference. He also lays stress on making universities accountable (P148). Quite appropriately, the author draws our attention to the challenges arising out of artificial intelligence and machine learning (AI & ML), which have made inroads into teaching-learning processes (P.151) Heeding the advice and suggestions made by Saidapur, will go a long way in remodelling our universities and repurposing higher education. The author's reflections on the future of higher education need to be taken seriously. The book ends with a brief Postscript. The 'Notes' section explains the intended meanings of various terminologies used in the higher education ecosystem, such as modern pedagogies, disciplines, open-electives, add-on courses, liberal arts, inter, multi and trans-disciplinary subjects, etc. The book is a must-read for all types of stakeholders in higher education.   ❑

AIU Publication

on

REIMAGINING INDIAN UNIVERSITIES

'Reimagining Indian Universities' edited by Dr. (Mrs) Pankaj Mittal and Dr S Rama Devi Pani is a collection of essays by some of the greatest thinkers in the field of Indian higher education. Each essay in the book examines one or more of the critical topics and provides solutions and methods to overcome the issues involved in them. It provides new solutions and methods in the form of reforms and innovations to elevate Indian universities to world-class top-ranking levels. The book aims at providing a roadmap to government as well as the universities to gear themselves towards becoming more responsive to the present and future demands of higher education. Generating a corpus of new ideas that are significant for reimagining, reforming and rejuvenating Indian higher education system, Book is 'must read' for all those who are interested in reforming Indian Higher Education System.

The release of the book in the Annual Meet of Vice Chancellors 2020, coincides with the launch of New Education Policy. The Foreword for the Book was written by the then Minister of Education Shri Ramesh Pokhriyal 'Nishank'.

PP: 372, Unpriced. Available at AIU Website: www.aiu.ac.in

THESES OF THE MONTH

SCIENCE & TECHNOLOGY
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of May-June, 2022)

AGRICULTURAL & VETERINARY SCIENCES

Biotechnology

1. Pradeep, S. **Optimization of cost effective micropropagation and in vitro secondary metabolite production of *Ophirrhiza mungos* L.- A comptothecin yielding herb**. (Dr. Anuradha M), Department of Biotechnology, Acharya Nagarjuna University, Nagarjuna Nagar.

BIOLOGICAL SCIENCES

Biotechnology

1. Babu, Desabattula Samuelsparjan. **Effect of culture media, plant growth regulators and genotypes on the in vitro regeneration of oil palm (*Elaeis guineensis jacq*)**. (Dr. S R Krishna Motukuri), Department of Biotechnology, Koneru Lakshmaiah Education Foundation, Guntur.

2. Matangi, Suryaprabha. **Pharmacological and microbiological evaluation of polyherbal extract of *Amorphophallus, Paeoniifolius, Citrus sinensis* and *Plumbago Zeylanica***. (Dr. Ramarao Nadendla), Department of Biotechnology, Acharya Nagarjuna University, Nagarjuna Nagar.

3. Routhu, Sunitha Rani. **Studies on extracellular polymeric biosurfactants from marine algicolous and sedimental bacteria and their applications**. (Prof. Ahmed Kamal), Department of Biotechnology, Acharya Nagarjuna University, Nagarjuna Nagar.

Botany

1. Padmaja, Vasa. **A comparative study on ball milling approach of herbal nanopower synthesis from *Rauwolfia serpentina, Rauwolfia teraphylla* and to evaluate their antimicrobial, cytotoxic and biological activities**. (Prof. G Rosaiah), Department of Botany, Acharya Nagarjuna University, Nagarjuna Nagar.

2. Jyothi, D. **Medicinal plants of tribal traditional system from Guntur District, AP State (India) along with phytochemical screening and evaluation of some biological activities of *Diospyros Sylvatica Roxb***. (Prof. G Rosaiah), Department of Botany, Acharya Nagarjuna University, Nagarjuna Nagar.

Life Science

1. Walke, Prachi Bhalchandra. **Molecular investigation of glycated insulin induced insulin resistance and hyperglycemia induced beta cell dysfunction**. (Dr. Mahesh Kulkarni), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

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Academy of Scientific and Innovative Research, Ghaziabad.

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Zoology

1. Prasad, P Ramakrishna. **Studies on the toxicity and other effects of the Deltamethrin, the synthetic pyrethroid, to the fresh water fish *Cyprinus carpio* (Linnaeus, 1758).** (Dr. N Gopala Rao), Department of Zoology, Acharya Nagarjuna University, Nagarjuna Nagar.

EARTH SYSTEM SCIENCES

Environmental Science

1. Cyril Lucy, Monica. **Evaluation of andiabetic and hepatoprotective activities of *Teramnus labialis,* Grewia *asiatica* and Xanthium *strumarium* plant extracts**. (Prof. Z Vishnuvardhan), Department of Environmental Science, Acharya Nagarjuna University, Nagarjuna Nagar.

Geology

1. Bhattacharjee, Niladri. **Evolution of The Habo Dome and adjacent areas in the Kachchh Inland Basin, Gujarat, India**. (Prof. S Mohanty and Prof. P K Khan), Department of Applied Geology, Indian Institute of Technology, Dhanbad.

ENGINEERING SCIENCES

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Civil Engineering

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Computer Science & Engineering

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Electrical & Electronics Engineering

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Electrical Instrumentation Engineering

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Electronics & Communication Engineering

1. Duvvada Ram, Sandeep. **Conformal and flexible textile- based wearable antenna for on-body wireless communication applications**. (Dr. N Prabakaran), Department of Electronics & Communication Engineering, Koneru Lakshmaiah Education Foundation, Guntur.

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Structural Engineering

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Mathematics

1. Lakshmi, K. **Some properties on dominating parameters of trapezoidal graphs with algorithms**. (Dr. G Srinivas and Dr. R Bhuvana Vijaya), Department of Mathematics, Jawaharlal Nehru Technological University Anantapur, Ananthapuramu.

MEDICAL SCIENCES

Pharmaceutical Science

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के अंतर्गत विदेशों में प्रतिनियुक्ति

ब्राज़ील, हंगरी, इज़राइल, पोलैंड, स्कॉटलैंड और स्लोवेनिया गणराज्य में विदेशी अकादमियों / संगठनों के साथ वैज्ञानिक द्विपक्षीय आदान-प्रदान कार्यक्रम के अंतर्गत लघु अवधि की यात्राओं (वरिष्ठ वैज्ञानिकों के लिए 1-4 ससाह) और दीर्घकालिक यात्राओं (जूनियर / युवा वैज्ञानिकों के लिए 3 महीने) के लिए इंजीनियरी, चिकित्सा और कृषि सहित विज्ञान के सभी क्षेत्रों में कैलेण्डर वर्ष 2023 के दौरान विदेशों में प्रतिनियुक्ति के लिए पीएच.डी की डिग्री रखने वाले और मान्यता प्राप्त विज्ञान और प्रौद्योगिकी संस्थानों/ विश्वविद्यालयों में नियमित **(स्थायी)** पदों पर आसीन तथा अग्रणीय क्षेत्रों में अनुसंधान कार्य में सक्रिय रूप से कार्यरत उत्कृष्ट वैज्ञानिकों/ अनुसंधानकर्ताओं से आवेदन-पत्र आमंत्रित किए जाते हैं।

विस्तृत दिशा-निर्देश तथा आवेदन प्रपत्र **http://www.insaindia.res.in** के **डाउनलोड फार्म सेक्शन** से डाउनलोड किया जा सकता है। आवेदन प्रपत्र की हार्ड कॉपी को विधिवत् रूप से भर कर और अपनी संस्था के प्रमुख द्वारा पृष्ठांकित करवाकर **31 अगस्त, 2022** तक **सहायक कार्यकारी निदेशक-। (अंतरराष्ट्रीय), भारतीय राष्ट्रीय विज्ञान अकादमी, बहादुर शाह ज़फर मार्ग, नई दिल्ली-110002** के पास जमा करा दें। संपूर्ण आवेदन पत्र की सॉफ्ट कॉपी **(केवल एकल पीडीएफ फाइल)** **intacademy@insa.nic.in** पर ई-मेल के माध्यम से भेज सकते हैं और अपनी ई-मेल की विषय पंक्ति में अपने **नाम, अनुसंधान का क्षेत्र और प्रस्तावित देश** का उल्लेख करें। अधूरे आवेदन पत्रों को अस्वीकृत कर दिया जाएगा और आगे कोई पत्राचार नहीं किया जाएगा।

सहायक कार्यकारी निदेशक-। (अंतरराष्ट्रीय)

DEPUTATION OF INDIAN SCIENTISTS ABROAD
UNDER BILATERAL EXCHANGE PROGRAMME-2023

Applications are invited from outstanding scientists/ researchers holding Ph.D. degree and having regular **(permanent)** positions in recognized S&T institutions/universities and actively engaged in research in frontline areas for deputation abroad during the Calendar year 2023 in all fields of Science including Engineering, Medicine & Agriculture for short term visits (1-4 weeks for senior scientists) and long term visits (3 months for junior/younger scientists) under the Scientific Bilateral Exchange Programme with overseas Academies/Organizations in **Brazil, Hungary, Israel, Poland, Scotland and Republic of Slovenia.**

The detailed guidelines and application form can be downloaded from **download form section** of **http://www.insaindia.res.in**. The hard copy of application duly completed and endorsed by the Head of the Institution should be submitted latest by **August 31, 2022** to **Assistant Executive Director- I (International), Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi - 110002.** The soft copy of complete application **(single PDF file only)** can be sent via email to: intacademy@insa.nic.in, and mention your **Name, Area of Research and Proposed Country** in the subject line of email. Incomplete applications will be rejected and no further correspondence shall be made.

Assistant Executive Director-I (International)
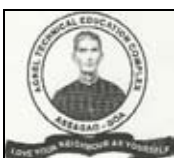
AGNEL INSTITUTE OF TECHNOLOGY AND DESIGN
AGNEL TECHNICAL EDUCATION COMPLEX, ASSAGAO, BARDEZ, GOA 403507
Tel / Fax: 9975797916   **Email: aitdgoa@gmail.com**   **website: www.aitdgoa.edu.in**

AITD invites applications for the following positions. Recruitment details are as given below:

Sr. No.	Department	Position	Nature of Appointment
01	Mechanical Engineering	Associate Professor - 01 Post	Contract basis
02	Computer Engineering	Associate Professor - 01 Post	Contract basis
		Assistant Professor – 01 Post	Contract basis
03	Electronics & Communications Engineering	Associate Professor - 01 Post	Contract basis
		Assistant Professor – 01 Post	Contract basis
04	Basic Sciences and Humanities	Assistant Professor (Managerial Economics) - 01 Post	Regular basis
		Assistant Professor (Mathematics) - 01 Post	Regular basis
05	Sports	College Director of Physical Education and Sports – 01 Post	Contract basis

- 15 years Residence/ Domicile certificate in Goa issued by the competent authority.

- For positions at Sr. No. 1, 2 and 3 qualifications are strictly as per AICTE norms. For further details kindly visit: **www.aicte-india.org.**

- For positions at Sr. No. 4 and 5 qualifications are strictly as per UGC norms. For further details kindly visit: **www.ugc.ac.in**

The application form may be downloaded from our website www.aitdgoa.edu.in. Interested candidates are requested to send hard copies of their applications along with self-attested copies of all relevant certificates and a recent photograph to "THE PRINCIPAL" within 15 days from the release of this advertisement to the above mentioned address.

Fr. Agnelo Gomes
Director, ATEC

Shri Sangameshwar Education Society's
SANGAMESHWAR RATRA MAHAVIDYALAYA
SOLAPUR - 413 001 (MAHARASHTRA)

W A N T E D
(Permanent Non-Grant Basis)

Applications are invited from eligible candidates for the following posts.

Sr. No.	Name of the Post	No.of posts	Full Time/CHB
1	PRINCIPAL	1	Full Time
2.	**Assistant Professor in**		
	Marathi	1	CHB
	English	1	CHB/PT
	Hindi	1	CHB
	Kannada	1	CHB
	Sociology	1	CHB
	History	1	CHB
	Geography	1	CHB
	Politics	1	CHB
	Psychology	1	CHB
	Statistics	1	CHB
	B.R.F.	1	CHB
	Commerce	2	Full Time
	Economics	2	Full Time/CHB
3	Librarian	1	Full Time
4	Physical Director	1	Full Time

NOTES :
1. Educational Qualification & Experience are as per UGC norms, Govt. of Maharashtra & Solapur University, Solapur rules issued by time to time.
2. Those who are already in service should apply through proper channel.
3. Candidates should apply **ONLINE** giving full particulars **within 30 days** from the date of publication of this advertisement our college website : www.sangameshwarnightcollege.in.
4. No T.A./D.A.will be paid for attending interview.
5. The above mentioned posts will be filled up as per the availability of workload.
6. **Any communication will disqualify the candidate. The right to fill up above mentioned posts is reserved.**

Place : Solapur
Date : 22.06.2022

SECRETARY
Shri.Sangameshwar Education Society,
Sangameshwar College, Solapur

Shivgram Education Society's
SHRI KAMAXIDEVI HOMOEOPATHIC MEDICAL COLLEGE & HOSPITAL
Affiliated to Goa University
(Recognized by CCH, Ministry of Health & Family Welfare, Dept. of AYUSH, Govt. of India)
" Shiv Shail" Shiroda – Goa-403 103 ● Ph. No. 0832-2306842 (Dir) 2307441.

STAFF REQUIRED

Applications are invited from eligible candidates for the following posts in the self-financing Institution offering BHMS course purely for the current academic year 2022-23 on contract basis. The application with essential qualification and experience should reach the undersigned **within 15 days** from the date of publication of this advertisement.

Sr. No.	Department	Professor	Associate Prof.	Assistant Prof.
01	Dept. of Anatomy	—	01	01
02	Dept. of Physiology	01	—	01
03	Dept. of Pharmacy	—	—	01
04	Dept. of Pathology	—	01	01
05	Dept. of FMT	—	—	01
06	Dept. of Gynecology & Obst.	01	01	01
07	Dept. of Surgery	—	—	01
08	Dept. of Community Medicine	—	01	01
09	Dept. of Materia Medica	01	01	01
10	Dept. of Organon	01	01	01
11	Dept. of Repertory	01	01	01
12	Dept. of Medicine	01	01	01
13	**Librarian**	01		

ELIGIBILTY:
* Essential qualification, Desirable qualification and experience as per Central Council of Homoeopathy (MSR) Amendment Regulation March 2013, as amended up to 2016.
* Librarian: A master degree in Library Science/ Information Science from recognized University with atleast 55% marks with knowledge of computer & internet.

GENERAL INSTRUCTION:
i. Candidate already in service should apply through proper channel.
ii. T.A./D.A. shall NOT be paid by this institute for attending the interview.
iii. Application can also be submitted by Online mode on **skhmchgoa98@gmail.com.**

SECRETARY

WANTED

Applications are invited from the eligible candidates for the post of **PRINCIPAL** to be filled in **Toshniwal Arts, Commerce & Science College, Sengaon, Dist. Hingoli** run by **Shri Gajanan Shikshan Prasarak Mandal Yeldari Camp, Tq. Jintur, Dist. Parbhani (Linguistic Minority Institute)**. Eligible Candidates should submit their application along with all necessary documents **within Fifteen Days** from the date of publication of the Advertisement in person or Registered Post only.

Sr. No.	Post	No. of Post	Full Time	Reservation
01	**Principal**	One	Full Time	Unreserved

Educational Qualification:

A. Eligibilities:-

1) A Master's Degree with at least 55% marks (or an equivalent grade in a point scale wherever grading system is followed) by a recognized University of its equivalent grade and good academic record.

2) Ph.D. qualification in concerned/allied/relevant discipline with evidence of published work and research guidance.

3) Professor/ Associate Professor with a total experience of 15 years of teaching/ research in Universities/ Colleges and other institutions of higher education.

4) A minimum of 10 research publication in peer reviewed or UGC listed journals.

5) A minimum of 110 research score as per Appendix II, Table 2 of UGC regulations 2018.

6) Academic Eligibility and other rules regulations as per UGC regulation 18th July, 2018 and Govt. Resolution No. Misc-2018/C.R.56/UNI-1 date 08th March, 2019.

B. Tenure :-

A College **Principal** shall be appointed for a period of five years, extendable for another term of five years on the basis of performance assessment by a committee appointed by the University, constituted as per these rules.

Salary & Allowances: -

Pay Scale as per the U.G.C., State Govt. of Maharashtra & Swami Ramanand Teerth Marathwada University's rules from time to time.

Note:-

1) No T.A. / D.A. will be paid to attend the interview.

2) Eligible candidates should submit their applications through proper channel.

3) All attested Xerox copies of certificates should be attached with the application.

4) The vacant posts are being filled under the decision of Hon'ble High Court, Aurangabad Bench Petition No. 12051/ 2015.

5) The Original Certificates must be provided at the time of interview.

Address for Correspondence:-
The President,
Shri Gajanan Shikshan Prasarak Mandal's
Toshniwal Arts, Commerce & Science College,
Sengaon, Tq. Sengaon, Dist. Hingoli 431 542.

President	Secretary
Shri Gajanan Shikshan Prasarak Mandal,	**Shri Gajanan Shikshan Prasarak Mandal,**
Yeldari (Camp.)-431510, Tq. Jintur, Dist. Parbhani	**Yeldari (Camp.)-431510, Tq. Jintur, Dist. Parbhani**

जम्मू केंद्रीय विश्वविद्यालय
Central University of Jammu
राया–सूचानी (बागला), जिला सांबा–181143, जम्मू (जम्मू एवं कश्मीर)
Rahya-Suchani (Bagla), District: Samba – 181143, Jammu (J&K)

EMPLOYMENT NOTIFICATION NO.: 18
(FOR TEACHING STAFF)

Central University of Jammu invites online application for various teaching positions under direct recruitment from the eligible Indian Citizens and Overseas Citizen of India (OCI) in the prescribed format. Minimum qualification, Experience, Reservation, Service Conditions, Emoluments, Age of Superannuation, etc. are as prescribed by the University/ UGC/Government of India as per details available at **www.cujammu.ac.in.**

S. No.	Name of the Department/ Centre	Professor	Associate Professor	Assistant Professor
1.	Centre for Molecular Biology	-	01 SC (BL) 01 UR	-
2.	Centre for Comparative Religions & Civilizations	01 UR	01 UR 01 SC (BL)	01 OBC 01 SC (BL)
3.	Department of Botany	-	01 OBC (BL) 01 SC (BL)	01 SC
4.	Department of Chemistry and Chemical Sciences	01 SC (BL)	01 OBC (BL)	01 UR
5.	Department of Computer Sciences & IT	-	01 UR	-
6.	Department of Economics	01 UR	01 OBC (BL) 01 UR	-
7.	Department of Educational Studies	01 UR	-	01 OBC
8.	Department of English	01 OBC (BL)	01 SC (BL)	-
9.	Department of Hindi & Other Indian Languages	-	01 OBC (BL)	-
10.	Department of Human Resource Management and Organizational Behaviour	01 UR	01 OBC (BL)	-
11.	Department of Marketing and Supply Chain Management	01 OBC	01 UR 01 ST (BL)	-
12.	Department of Mass Communication and New Media	01 EWS	01 UR 01 OBC	-
13.	Department of Mathematics	01 SC (BL)	01 ST (BL)	-
14.	Department of Nano Sciences and Materials	01 OBC (BL)	01 UR 01 ST (BL)	-
15.	Department of National Security Studies	01 OBC (BL)	01 OBC (BL) 01 SC (BL)	01 EWS
16.	Department of Physics and Astronomical Sciences	01 SC (BL)	-	-
17.	Department of Public Policy and Public Administration	01 UR	01 UR 01 OBC	01 SC
18.	Department of Social Work	01 OBC (BL)	01 UR 01 OBC (BL)	-
19.	Department of Tourism and Travel Management	01 UR	01 OBC (BL) 01 SC (BL)	-
20.	Department of Zoology	01 ST (BL)	01 EWS	-

BL-Backlog Vacancy/SC-Scheduled Caste/ST-Scheduled Tribe/EWS-Economically Weaker Section

Note: **Persons with Disability shall be considered subject to availability and suitability of positions for OH, HH & VH as per reservation norms. The PwD candidates shall be provided horizontal reservation as per the Government Guidelines wherever PwD candidates are available.**

Important Information

1. The detailed eligibility conditions and other relevant details are available on the University **website: www.cujammu. ac.in**. The online application form, complete in all respects must be submitted along with online payment of **Rs. 1,000/- for the post of Assistant Professor and Associate Professor/ Professor** (fee exempted for candidates belonging to SC, ST, Persons with Disabilities and all candidates who applied earlier against Rolling Advertisement Phase-II & III along with addendum of Rolling Advertisement III by mentioning the payment details/Form No.). The candidates who have applied earlier against above Rolling advertisement, their application will be considered, if applied upto publication date of this Employment Notification. Those who desire to update their details/experiences etc need to apply afresh by giving the reference of pervious application form number. **The last date for filling online applications form is 05-08-2022 (till 5 PM).**

2. Online SAMARTH portal for applying on-line will be open from **06-07-2022 (10 AM)** to **05-08-2022 (5 PM).**

3. The candidates are requested to regularly visit the University **Website www.cujammu.ac.in** for further reference. They should also regularly check their email account for updates. Hereafter, issuance of notifications in the newspapers, for any information in this regard, is not obligatory on the part of the University.

4. For any queries related to filling of online applications forms and payment issues please e-mail at **it.helpdesk@ cujammu.ac.in.** For any other information related to employment notification kindly e-mail at **teaching. recruitment@cujammu.ac.in.**

Sd/-

कुलसचिव/**Registrar**

फोन: 01923-249658

ईमेल: **registrar@cujammu.ac.in**

Ref.: No. CUJ/Estab.T/Empl.Notf.-18/321

Date: 04-07-2022

Malad Kandivli Education Society's
NAGINDAS KHANDWALA COLLEGE OF COMMERCE, ARTS & MANAGEMENT STUDIES AND
SHANTABEN NAGINDAS KHANDWALA COLLEGE OF SCIENCE
Bhadran Nagar, Road No.1, Bhavishya Bharat Campus, Off. S.V. Road, Malad (W), Mumbai - 400 064

(Linguistic Minority Institution)

APPLICATIONS ARE INVITED FOR THE FOLLOWING **CLOCK HOUR BASIS POSTS**
FOR THE ACADEMIC YEAR 2022-2023
AIDED

Sr. No.	Cadre	Subject	Total No. of C.H.B. Posts	Post Reserved for
1.	Assistant Professor	Statistics	04	04 - OPEN
2.	Assistant Professor	Economics	04	04 - OPEN
3.	Assistant Professor	Accountancy	06	06 - OPEN
4.	Assistant Professor	Commerce	03	03 - OPEN
5.	Assistant Professor	Psychology	01	01 - OPEN
6.	Assistant Professor	Geography	02	02 - OPEN

The above posts are open to all, however, candidates from any category can apply for the post.

Reservation for Women will be as per **University Circular No. BCC/16/74/1998 dated 10th March, 1998. 4% reservation shall be for the persons with disability as per University Circular No. Special Cell/ICC/2019-20/05 dated 05th July, 2019**.

Candidates having knowledge of Marathi will be preferred.

"Qualification, Pay Scales and other requirement are as prescribed by the U.G.C. Notification dated 18th July, 2018, Government of Maharashtra Resolution No. Misc-2018/C.R. 56/18/UNI-1 dated 8th March, 2019 and University Circular No. TAAS/ (CT)/ICD/2018-19/1241 dated 26th March, 2019 and revised from time to time." Remuneration of the above post will be as per University Circular No. TAAS(CT)/01/2019-2020 dated 02nd April, 2019 & University Circular No. CTAU/23/2021-2022 dated 25th January, 2022. The Government Resolution and Circular are available on the website : mu.ac.in.

Applications with full details should reach the **PRINCIPAL, NAGINDAS KHANDWALA COLLEGE OF COMMERCE, ARTS & MANAGEMENT STUDIES AND SHANTABEN NAGINDAS KHANDWALA COLLEGE OF SCIENCE, Bhadran Nagar, Road No. 1, Bhavishya Bharat Campus, off. S.V. Road, Malad (West), Mumbai – 400 064 within 15 days** from the date of publication of this advertisement. **This is University Approved advertisement.**

Sd/-

PRINCIPAL

Diocesan Society of Education's
Rosary College of Commerce & Arts
Navelim, Salcete, Goa-403 707
Minority Institution under Article 30(1) of the Indian Constitution
(Affiliated to Goa University) (Grant-in-Aid)
Re-Accredited by **NAAC** with `A' Grade with a CGPA Score of 3.29 (3rd Cycle)

Applications stating full name, address, age with date of birth, educational qualifications with marks and percentage, experience, etc., are invited from Indian nationals for the following posts for the academic year **2022-23**:

1.	Asst. Prof. in Mathematics	-	1 Post **Regular Full Time Basis**
2.	Asst. Prof. in Konkani	-	1 Post **Regular Full Time Basis**

Essential Requirements:

1. Master's degree in the relevant subject with atleast 55% marks or its equivalent grade and good academic record. The candidate must have the Master's degree as well as Bachelor's degree in the same subject for which he/she is being appointed unless he / she has passed the Post Graduate examination under the change of faculty scheme.

2. Candidates for the above posts, should have cleared the Eligibility Test for lecturers conducted by UGC/ CSIR such as NET/SET or similar test accredited by UGC. However, candidates who have been awarded the Ph.D. degree in compliance with the UGC (minimum standards and procedures for award of Ph.D. degree) Regulations, 2009 or the University Grants Commission (minimum standards and procedure for award of M.Phil/Ph.D. Degree) Regulation 2016 and their subsequent amendments from time to time, as the case may be shall be exempted from the requirement of the minimum eligibility condition of NET / SET for recruitment and appointment of Assistant Professor.

3. In case candidates having passed the said Eligibility Test / Ph.D. for the posts are not available or are not found suitable, candidates fulfilling all other conditions would be considered for appointment on Contract / Lecture Basis (subject to the approval of the Goa University / Government of Goa and / or as per the prevailing guidelines of Goa University / Government of Goa) on purely temporary basis till the end of the academic year **2022-23**.

Service Conditions: As per the provisions of Goa University, University Grants Commission, Directorate of Higher Education, Government of Goa, Diocesan Society of Education and other competent authorities. A certificate stating 15 years residence of the candidate in Goa issued by State Government is mandatory. Knowledge of Konkani is essential and knowledge of Marathi is desirable. Persons who are already employed shall send their applications through proper channel. Break in service, if any, should be accounted for.

Scale of Pay: As per the provisions of the Goa Government and Goa University.

Vacancies will be filled up, subject to approval of Goa University and Directorate of Higher Education, Government of Goa, and other stipulations. All other regulations / guidelines as those prescribed by UGC, Goa University, Government of Goa and Diocesan Society of Education will apply.

Application with incomplete information will be rejected outright.

Applications along with attested photocopies of mark sheets of all examinations from SSC onwards should reach the **Acting Principal, Rosary College of Commerce and Arts, Navelim, Salcete, Goa-403707 within 20 days** from the date of publication of this advertisement by superscribing on the envelope `**Application for the Post of _____**'.

Date: 6th JULY, 2022

Acting Principal

Licenced to post without prepayment under WPP No. U(C)-109/2021-23

Postal Regd. No. DL (C)-05/1241/2021-23

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