Rs. 30.00
ISSN 0566-2257

UNIVERSITY NEWS

A Weekly Journal of Higher Education

Association of Indian Universities
Vol. 58 • No. 36 • September 07-13, 2020

Celebrating 90 Years of University News

#Let'sBeatCoronaTogether

UNIVERSITY NEWS
Vol. 58 September 07-13
No. 36 2020
Price Rs. 30.00

A Weekly Journal of Higher Education Published by the Association of Indian Universities

In This Issue

New Subscription Tariff
(Effective April 01, 2020)

	Inland		Foreign	
Institutions	Academics/ Students *(at residential address only)*		Airmail	Surface Mail
	Rs.	Rs.	US$	US$
1 year	1250.00	500.00	210.00	170.00
2 years	2200.00	900.00	400.00	300.00

Subscription is payable in advance by Bank Draft/MO only in favour of Association of Indian Universities, New Delhi.

Artificial Intelligence and its Impact on Higher Education in Post COVID Era

Suresh Garg*

India had 1.91 million confirmed cases of Novel Corona Virus infection as on 5th August. Of these 1.28 million have recovered and 0.59 are active cases while over 40,000 precious lives have been lost. (Globally about 700K people have succumbed to the disease so far and this loss is more than the lives lost in WWI; COVID-19 is claiming one life every 15 seconds according to Reuters) With unlocking of economy and increase in testing, the number of infections has grown rapidly. There are claims and counter claims of community transmission in metro cities and spread to rural India. If that were true, we would be in for long term disruption on the economic front due to further decline in demand, trade and manufacturing. Migration of workers from cities has added a huge dimension to social dynamics and for once it seemed that even corona virus was discriminating against the poor and less privileged most mercilessly; many of them lost lives either to the disease or during the travel back home. Experts are of the view that COVID-19 is here to stay and humans will have to adapt to the new normal for safety, health and hygiene.

COVID-19 pandemic has affected higher education extremely harshly. Initially, everyone—from political leadership to academic administrators—was highly confused for the direction to take. After considerable discussions and debates, the regulators directed in April, 2020 that teaching-learning be shifted to e-mode so as to save human lives as well as loss of academic semester. As such, the change was abrupt, drastic and posed unique challenges to teachers as well as students. Teachers had to undergo digital transformation overnight, overcome camera inhibition and forego privacy and work overnight with meager resources for the sake of their students. However, being cost-effective, safe and convenient, e-teaching was adopted using technological tools such as Google-group, zoom meeting platform, learning management system (LMS), etc. Webinars were conducted to create awareness about various challenges faced by higher education in the COVID time (Garg, 2020). Following Cambridge University, IIT Bombay also decided to offer one full year (2021) programmes on-line. This decision was based on their belief that mask and social distancing would not be enough against corona virus. It seems that till such time reliable medicine or vaccine is made available, Face 2 Face (F2F) teaching-learning will have to be substituted by digital education. This concept got big boost in the country with the approval of New Education Policy by the Government of India (2020). When Higher Education Institutions (HEIs) in the country switched over to online education overnight, the teacher shifted from black board to computer screen. But strictly speaking, online education in its strict sense was not practiced. To develop reliable online practices, Rao (2020) has suggested that

* *Usha Martin University, Ranchi-834001. Email: vc@umu.ac.in*

Open Universities should shift to blended learning by integrating technology into all the domains of students support services. He argues for development of digital self-learning materials in the form of e-tutorials/ e-books embedded with audio and video resources, supplemented with OERs, interactive web links, discussion/ chat boards, online quiz/ educational games, animation, among others. This also holds for all HEIs, other than open universities, practicing Online Education. It would therefore be advisable that HEIs develop these resources either individually or in a group to save time and resources without compromising on quality. Also, HEI must undertake continuous professional development of teachers by engaging digital learning experts to conduct training workshops and empower them to redesign curricula, tutorials and continuous assessment tools suited to digital learning paradigm.

NEP-2020 lays great emphasis on use of technology for universalization of quality Higher Education (HE). It may be mentioned here that the policy places a lot of confidence in creativity of teachers and student entrepreneurs to integrate technological developments with education in multiple ways for multiplier effect. In paragraph 23.2, it visualizes that new technologies involving artificial intelligence, machine learning, block chains, smart boards, handheld computing devices, adaptive computer testing for student development, and other forms of educational software and hardware will bring about drastic changes in what and how students learn in the classroom and beyond. It also acknowledges at paragraph 23.8 that the NEP is being formulated when disruptive innovation of Artificial Intelligence has emerged with huge capabilities and applications in education at all levels. The Committee recognized the importance of AI as a valuable aid to the education system and hoped that soon our HEI would be poised to quickly respond to new challenges and developments. It would be pertinent here to quote Sejnowski who while aptly highlighting the importance of AI said, "Education, I think is going to be the killer app for deep learning." The most important point that NEP emphasizes is that to take higher education to the unreached, our HE should use technology around Artificial Intelligence (AI). But as we know from experience, there are several constraints in implementing even conventional technology supported education in the country (NKC, 2009; Seldon, 2018; Pant, 2019) and without AI, it may not be possible to democratize higher education.

Artificial intelligence is a term used for information technology based computer systems or machines that can think and complete tasks that require human intelligence. In a way, AI stimulates and extends human intelligence. However, these cannot act without human element. AI is classified as Weak AI and strong AI. While weak AI can be used to accomplish a particular task, strong AI can perform any cognitive function that human mind can perform. That is why leading individuals consider it as existential threat to human civilization. As of now, 77 per cent people use AI and tech companies like Google, Facebook, Microsoft, Abode, etc, are working tirelessly to extend the range of its applications, which are currently being used in finance, health care, transportation, education, etc. It is estimated that in about 50 years from now, machines will take over nearly 70 per cent jobs that we do now.

The first wave of AI started in 1960s. It was based on expert knowledge engineering; domain experts devised computer programs according to the knowledge about the application domains and first computer tutoring systems began to appear. The typical approach during this wave was exemplified by a computer system that emulated the decision-making ability of humans. Narrow-domain dialogue systems and chat bots, chess-playing programs, traffic light controllers, optimization software for logistics of good deliveries are some familiar examples. It could put questions to learners so as to judge their learning as they progressed through the materials. The fact the immediate feedback was provided to learners extended its usefulness. However, the obvious limitations of the first-generation knowledge based AI paradigm for automatic learning were cost and limited availability. Moreover, uncertainty in handling and generalization capabilities led to the second wave of AI in 1980s.These systems catered to the issues of learning and perception capabilities for complex AI systems wherein they helped students in problem solving by giving hints. But these were not scalable.

The third wave of AI was propelled by the new paradigm of Deep Learning. In traditional machine-learning approaches, feature engineering required significant human expertise and the models lacked the ability to form levels of decomposable abstractions that automatically disentangled complex factors in shaping the observed data. Deep learning circumvents these difficulties by using a deep, layered model structure, often in the form of neural networks, and the associated

end-to-end learning algorithms. The advances in deep learning have been the driving force behind the current AI inflection point and the resurgence of neural networks. Deep Learning applications include image captioning, visual question answering, web search, natural language processing, customer relationship management, recommendation systems, robotics, self-driving vehicles and board games like AlphaGo, Poker, and DOTA2, etc.

Higher education needs to be adaptive and evolve continuously. As mentioned earlier, higher education will be impacted by AI in many ways and the one of the major areas is curricula. The strength of AI is its speed, accuracy, and consistency. Obviously, we cannot compete with AI on these dimensions. However, AI is weak in soft skills: creativity, innovation, critical-thinking, problem-solving, communication, leadership, collaboration, and empathy, among others. It means that AI can be used to train learners in the fundamentals of science, mathematics and engineering.

Artificial Intelligence is making a radical impact on the education system. With the introduction of AI in HEIs, machines will soon handle all repetitive tasks such as paper setting and grading. Some of the potential benefits of AI and Deep Learning in education include:

- personalize learning; through diagnostic testing, AI can help teachers identify strengths and weakness of a learner, i.e., what a student does not know and then help develop personalized curricula for her to meet her learning need and style. AI can also recommend resources based on individual needs, the current level of knowledge, and set goals.
- free teacher's time through automation of grading for professional development and lecture preparation; with automated evaluation, unfair/ biased grading will become redundant.
- identify instructional gaps in course content based on learners performance; students could also engage in personalized conversation with an intelligent/programmed machine and get instant feedback for improvement without facing peer pressure or teacher's censure.
- learn efficiently through customized learning interfaces and digital learning guides which provide interactive content, feedback, exercises and assessment.
- help hearing impaired through real-time subtitles and translation**;** with online courses/classrooms, students with hearing impairment and speaking other languages will be able to participate in the lectures due to availability of real-time subtitles and real-time translation, respectively.
- tutoring; AI enabled machines are taking on the role of humans including tutoring. "Intelligent Tutoring Systems" can gauge a student's learning style and pre-existing knowledge to deliver customized support and instruction. AI powered platforms can read students' handwriting and auto-grade schoolwork. This helps the teacher who can advise the learner to watch relevant video programmes/ online lectures while at home and spend time on problem solving in the class.
- remove geographical national boundaries and forge cultural synergies by catering to the unreached, i.e. those who could not get benefits of HE due to social, geographical, economical and physical considerations of self or the country and lived in 'isolation' for decades.
- scan the faces of learners and help teachers know as to who is not paying attention or not following what is being taught.

In short, technology in collaboration with teachers would help create a system where students could learn faster and more efficiently. However, there will be paradigm shift in the role of teachers and delivery of education; the teachers will no longer remain the monolithic repository of knowledge and sages on stage--they will be facilitator and help learners to successfully navigate through a programme while AI lights the way. However, it is important to realize that even AI cannot replace/eliminate the teacher in the teaching-learning process, though their role would substantially change; i.e., teachers would continue to be an important ingredient in the teaching-learning process.

Though AI is here to stay, there could be social issues that need serious attention. For instance, researches have shown that a robot can do the task of six persons and millions of people would be potentially rendered jobless. Moreover, with job replacements generated by AI, future job market and required skill sets would be significantly different from those of now. It means that to implement AI led education, teachers would be required to unlearn and relearn different skill sets. This necessitates continuous professional

development as absolutely necessary component. Though for a country of the size and diversity of India, it would be a herculean task because taking teachers away from their respective places of work for F2F training would cause huge disruption, it would be prudent to make a beginning in this direction immediately. Furthermore, jobs that involve routine and structured tasks can be easily automated and will be replaced by AI soon. In Delhi, driverless metro train is the foremost example. On the other hand, tasks that are unstructured and involved, like managing people, are relatively harder to be replaced by AI.

China is the world leader in AI-centered education and US is taking steps to put AI in the classroom. European countries are also investing in AI for education in a big way. Although we in India are convinced that AI in education will change the way we learn, not much has been said about its implementation in the NEP (2020); the committee probably thought it more appropriate to leave the details to domain experts in the face of various other challenges. There is a belief that we in India are good in planning but poor in implementation. However, dealing with AI in HE the same way could prove disastrous as the pace of change is too rapid and we may be left far behind the leaders in the field. Therefore, constituting a Task Force for working out actionable agenda for HE would be required without delay on the pattern of Programme for Action (1986). To conclude, if the country has to achieve 50 per cent GER by 2030, inclusion of AI and association of knowledgeable tech-savvy academic experts to work the way forward must be given immediate attention. Probably Kotter's 8 step change model (Kotter, 1995) could be the starting point. The focus of this model is on accepting the change and working on ways to get people on board rather than the actual change:

1. Highlight the urgency for change;
2. Build a team dedicated to bring about change;
3. Create the vision for change;
4. Communicate the need for change;
5. Empower staff with the ability to change;
6. Create short-term goals;
7. Observe persistence and perseverance; and
8. Make the change permanent.

Acknowledgements:

The Author Expresses thanks to Dr Amir Akhtar of Usha Martin University, Ranchi and Prof. M. M. Pant, Former PVC, IGNOU for some very useful inputs.

References

1. Garg, S. (2020). *Digital Education: Will it help overcome post Covid concerns and Improve quality of higher education*?, University News, **52**(49), p. 28 – 34.
2. Government of India (2020). "New Education Policy", New Delhi: Ministry of Education, Govt. of India.
3. Kotter, J. P. (1995). Leading change: Why transformation efforts fail.
4. National Knowledge Commission (2009). http://www.knowledgecommission.gov.in
5. Pant, M. M. (2019**).** The Compendium: A Comprehensive Resource Base on Artificial Intelligence and Machine Learning for Educators, CED Foundation Trust: New Delhi
6. Rao, N.(2020). *Remodeling Open and Distance Learning Institutions through Digital Self Learning Materials: Preparing for Post COVID-19 ERA*, University News, 58(25) June 2020, p. 3-7.
7. Seldon, A. (2018). The Fourth Education Revolution: Will Artificial Intelligence liberate – Amazon UKhttps://www.amazon.co.uk › Fourth-Edu…Partial summary of the book : http://independenthead.blogspot.com/2018/08/the-fourth-education-revolutionanthony. html?m=1 ❑

National Education Policy – 2020: A Learner's Paradigm

B S Madhukar *

During the course of my work in National Assessment and Accreditation Council (NAAC) I had the opportunity to visit hundreds of institutions (universities and colleges) across the country (urban, semi-urban and rural) as part of an assessment team and had opportunity to interact with faculty members and students in each of these institutions. In many interactions, I have expressed to students that myself and the peer team may not be able to converse with them in the language of their choice but try to converse using simple mix of languages for which they have responded that we can speak in English and they have the capacity and ingenuity to understand what is being said even though they may not be able to express well in English.

Most of the students particularly girls have expressed their eagerness to be fluent in English and indicated that adequate opportunities were not available to them to acquire fluency. In many cases they have expressed in their opinion that the faculty members themselves have difficulty to converse in English and that acts as an hindrance to them. This is true across all States including Urban Centre's. None of the students expressed dislike for any other languages. In one are two professional colleges in southern India, I witnessed creation of Hindi cell to facilitate their students to imbibe basic vocabulary in Hindi to converse with migrant work force in the State/region in their professional life.

In an interesting informal conversation in North-East India the students of a college shared with us (team) that they felt left out from main stream of the country and not comfortable in main land India during their visits. When asked for suggestions to improve the situation, one girl remarked it is time that Bollywood includes actor and actresses from the region and the film world superstars romance girls from the region. This comment was received with boisterous approval from other students. It seems to be a very insightful observation.

Hundreds of peer team visits were undertaken by NAAC selecting members from different states across the county and hardly an issue was raised that language is a barrier for evaluation of institutions.

This article is penned based on the field experience as paraphrased above and vital observation with regard to early childhood education in the National Education Policy -2020 juxtaposed with few sector-wise observations in relation to language dynamics per se.

Highlights of NEP 2020 Drawn from the Report on Early Childhood Education

Principles of the Policy

The foundational pillar of this policy are access, equity, quality, affordability and accountability and principle of this policy is based on flexibility. Early Childhood Care Education (ECCE) consists of flexible, multi-faceted, multi-level, play-based, activity-based and discovery based learning. E.g., alphabets, languages, numbers, counting etc.

Foundational Literacy and Numeracy

The ability to read and write and perform basic operations with numbers, is a necessary foundation and an indispensable prerequisite for all school and life-long learning (various governmental and non-governmental surveys indicate that a large proportion of students currently in elementary school estimated to be over five crores have not obtained foundational literacy and numeracy).

Multilingualism and Power of Language

It is understood that young children learn and grasp non-trivial concepts more quickly in their home language/mother tongue. Research clearly shows that children pickup languages extremely faster between the ages of two and eight and that multilingualism has great cognitive benefits to young students.

Students whose medium of instruction is the local/home language will begin to learn science and mathematics, bilingually in grade six so that by the end of grade nine they can speak about science and other subjects both in their home language and English.

Teachers

Teachers truly shape the future of our children, to ensure the truly excellent students enter the

* *Former Adviser and Executive Council/Governing Council Member, National Assessment and Accreditation Council, Bangalore and Founder Director, Quality Assurance Cell University of Mumbai, Mumbai. E-mail: madhukar.seshadri@gmail.com*

teaching profession especially from rural areas – a large number of merit based scholarships shall be instituted across the country for study at outstanding four year integrated B.Ed. programs. Teachers must be grounded in Indian values, languages, knowledge, ethos and traditions while also being well versed in latest advances in education and pedagogy.

A Few Sector-wise Observations in Relation to Language Dynamics Per Se

International

- When you look at the top ranked universities in the world or even in India, you can undoubtedly recognize student and faculty diversity in the institution and this is one of the core strengths of these universities. Obviously the diversity comes from different cultural/linguistic/racial background of students/faculty.
- Non English speaking countries in Europe increasingly offer graduate and postgraduate courses in English medium in their respective universities, a policy shift seen in the last few years.
- Students go to China or other Asian countries from India to study medicine not because it is taught in Mandarin etc., or to appreciate the countries language policies, but in spite of it , due to possible lack of opportunities in the home country. They overcome the language barrier.

Indian Context

Historical

- Human settlements have been in place before carving of linguistic states in the country and the residents of a state speak different language as mother tongue particularly in southern India. Movement of people across southern states happens routinely and communication has evolved its own language mix.
- The bigger states in the country like UP and Bihar has the largest representation in the Parliament and a single widely spoken language, but they are not the most prosperous states of the country as on date.
- Andhra Pradesh which was the first linguistic State to be formed based on language today is bifurcated into two States.

Industry/Economy

- The busiest airports in the country like Delhi, Mumbai, Kolkata, Hyderabad, Bengaluru and Chennai are located in different states. The language of administration in these states are one of the languages recognized under the Eight Schedule of the constitution enumerated in alphabetical order.
- Our flagship Organizations like ISRO, DRDO, BARC etc., are operated from different locations across the country and draw best talent bringing in diversity thereby excellence to the organization.
- Infosys and other such new age organizations have not succeeded because of any particular language affinity

Cultural

- The TV serials of Ramayana/Ramayan and Mahabharat/Mahabharata has been popular all across India not necessarily because of the language it was made in, but the emotional connect with our culture. Language as a barrier cease to be important.
- Devotees from across India visit holy places like Tirupati, Varanasi, Chardham, Jagannath Puri, Rameswaram, Kamakhya etc. not because of the languages spoken in the respective places but they identify with the deities and pray for peace and prosperity in the languages of their choice.
- Kannada language writers have bagged eight Jnanpith awards. It may be noted that in case of two of awardees, their mother tongue was not Kannada and another was also a Professor in English.

It has been observed over the years in Bangalore that children even when the mother tongue of each parent is different and not the local language, easily pick up the language spoken by the parents and in addition to the regional /local language and English. Exceptions have been noticed in a few cases and a small chat with the child exposes the reservation of parents on the matter (unfortunate prejudice).

In my considered opinion the corner stone of this policy in case of school education in particular is not about any languages but about making learning in schools joyful and achieve strong foundational literacy and numeracy among children. Given the research finding presented in the report saying that teaching in mother tongue ensures strong foundational learning and children between 2-8 years pick languages

very fast, it seems language as an issue is an adults problem.

The policy clearly brings out that crux of the matter that lies at the bottom of the pyramid of poor learning outcomes (of about 5 crore) people in foundational literacy and numeracy. It is a case of immense unpolluted talent lost before it can even get an opportunity to bloom. If this issue is not comprehensively addressed without any bias, any changes in other levels of educational pyramid will fall short to achieve the vision of *Atmanirbhar Bharat*.

As Education is in the concurrent list, States needs to *Suo motto* evolve strategies and operate in mission mode to attract best talent from across the country (diversity) and create world class teachers for school education with multilanguage skills (pay them more than the salary of a professor) in their respective states.

Ground level interactions during assessment exercise with university and college students (the next Generation teachers) indicate that it is eminently doable. All we need is to work in unison to create those extraordinary teachers. The new policy has dealt in detail on all aspects of teacher training which may be further fine- tuned as necessary. If the learner centric education has to be a reality as envisaged in the policy, it is in the hands of those new generation teachers and they are the key to make learning students centric.

In case of Higher Education a series of observation and changes has been made in the policy. One factor in my opinion which needs immediate attention is to bring student and faculty diversity into our campuses particularly in State Universities and its colleges as much as possible and as early as possible and this act in itself will create a positive vitality in the system. Hope and trust the authorities will act in this direction.

Considering that New Educational Policy 2020 has been adopted after thirty four years and the world has changed enormously during this period, and likely to change more rapidly in post covid era. It is time that we as stake holders drop our baggage/ prejudice of the past and desist from passing it to our next generation. The language issue will be handled by the coming generation fairly and appropriately and will also carry with them the roots of our culture which seems to have been lost over a period of time. It is important that education and in particular elementary education is insulated by unnecessary external influences.

Limiting the learning experience of students by any State on the grounds of short term considerations will end up against the interest of the very State and its overall prosperity in the long run. Lop-sided development hurts all States and the country as a whole.

The sector-wise observation made in the text of the article males it obvious that many factors play a role in development of a region and language in itself may not be the prime mover. This in no way suggests that we should give up on pride of our language, heritage and culture, but create a balance in such a way that we do not deviate from the larger vision. Fortunately or unfortunately historical event leaves imprint in evolution of human kind.

As the Honorable Prime Minister pointed out in recent webinar hosted by Ministry of Education, implementation of the policy in letter and spirit is the key. So educationist in particular should leave no stone unturned to achieve it. During implementation experiences will bring in course corrections and further strengthen the vision of the policy.

It is a great paradox that simplicity comes from passing through many complex stages of learning. ❑

National Education Policy-2020: Way Ahead for Outcome Based Education

Samir Terdalkar*

The New National Education Policy (NEP)-2020 has been now approved by the Union Cabinet and set to roll out in the coming academic years. The NEP is exhaustive focussing on all aspects of education-pre school education, school education and higher education. In Higher education, the policy made an effort to strike out balance between freedom given to the Higher Education Institutions (HEIs) and regulation. It gives leverage to colleges which are already autonomous and at the same time conveys that, all the affiliated colleges will be transformed into autonomous colleges which would be degree awarding institutions/colleges. There seems to be transformational changes with regard to programme structure where undergraduate degrees would be of four years and promotion of research well integrated at undergraduate level. Similarly, it gives impetus for traditional subjects to go beyond the disciplines depending on the learners requirement. There will be multiple entry and exit points for learners with each learner having an academic credit bank.

At this stage, there is a need to review the quality of education provided in traditional autonomous colleges as they will become degree awarding colleges. This itself increases accountability of autonomous colleges. Accountability would be in terms of the academic programmes offered, the designing of the curricula and its delivery and moreover multidisciplinary in those degrees which are being offered. Autonomous colleges function under the governance structure as per the regulations of University Grants Commission (UGC) and State Higher and Technical Education department. Typically, the governance structure comprises of Governing Body, Academic Council, Board of Studies and Board of Examinations. All these committees have representations from affiliating University under which the autonomous college is affiliated, State government nominee and a nominee from UGC. All the above bodies/committees have the responsibility to ensure proper functioning of the autonomous college (academic and administrative) and ensure quality education in the college.

* *Coordinator, Internal Quality Assurance Cell and Member Secretary, Academic Council, Fergusson College, Pune- 411004, Maharashtra. E-mail: samir@fergusson.edu*

Taking into consideration NEP 2020, every autonomous college need to develop a quality mandate and assign certain benchmarks and move strongly towards Outcome Based Education (OBE). While doing these exercises the autonomous colleges need to understand the principles of OBE and restructure and refine their curricula making them more outcome oriented.

When Draft of NEP-2019 was published by the Ministry of Human Resource Development (MHRD), University Grants Commission (UGC), published Handbooks (practical manuals) focusing on the methods to be followed while reforming higher education. One of the published handbooks entitled, 'Evaluation Reforms in Higher Educational Reforms' in November, 2019 specifies methodologies with reference to curriculum design and development and variety of methods for OBE including its writing, deploying, communicating and evaluation up to course attainment. This is first benchmark that needs to be created especially for autonomous colleges offering degrees in faculty of Arts and Humanities, Commerce and basic and applied sciences. If autonomous college (traditional ones) are to offer degrees as per NEP 2020, then they need to focus on following issues:

a) Rewrite their Vision and Mission Statements reflecting on spirit of NEP 2020.

b) Write Programme Educational Objectives (PEO) which would reflect on their Vision and Mission Statements.

c) Revisit all the Courses offered under B.A., B.Sc., and M.A. M.Sc., programme with special emphasis to bring in sea changes into them involving multidisciplinary and implement Gardner's Theory of Multiple Intelligences.

d) Modify their Course and Programme Outcomes into Course Learning Outcomes (CLOs) and Programme Learning Outcomes (PLOs) and adopt atleast one of the methods of CLO/PLO attainment.

e) Identify learning outcomes for the assessment.

f) Decide on criteria based on learning outcomes, i.e., the characteristics on which to judge student's performance.

g) Select levels of performance i.e. an appropriate scoring method must be chosen depending on the nature of the assessment and chosen scale.

h) Write descriptors, i.e., describe the expected achievement on each characteristic for each level of performance. The descriptions should be specific, clear and consistent.

i) A rubric for assessment of courses, also called a scoring guide, is a tool used to interpret and grade students' on any kind of work against criteria and standards. An assessment rubric provides the means to increase objectivity in assessment and reduce subjectivity; presents a clear expectation on the assessments, and relates it to learning outcomes; ensures consistency, transparency and fairness in the marking process across course instructors for the same assessment type; efficiently grades or marks many assessments for a large group of students; defines clear guidelines for moderation; and provides more objective data for analytics.

Every autonomous college can develop their own OBE model which will potentially measure graduate attributes like knowledge and skill, thereby enhancing employability. The success of OBE model will act as a pathway towards assessment and accreditation of the college. Once these steps are ensured it will also ease out in demonstrating and explaining qualitative metrics asked by National Assessment and Accreditation Council (NAAC) like, curricula developed and implemented have refence to the local, national, regional and global development needs which would essentially get reflected through PLOs and CLOS, its communication to all stakeholders of the College and will also explain attainment of PLOs and CLOs which are being evaluated by the college from time to time.

The success of the OBE model will depend on the efforts taken by individual teacher. For OBE model to be successful, the teacher should focus on:

a) Designing curriculum with specific CLOs. CLOs to be measured in terms of knowledge and skill gained by the learner at the end of the course.

b) Teaching pedagogy-preferably with reasonable interface of ICT.

c) Develop e-content as per four quadrant method for the course.

d) Develop competency for successfully conducting online teaching by using variety of platforms.

e) Assess learner as per cognitive ability and revised bloom's taxonomy.

f) Take appropriate care regarding sharing/uploading of contents on online platforms with regard to copyright and other legal modalities.

g) Design and develop a graduate exit feedback for indirect assessment of CLOs.

The autonomous colleges also have the freedom of conducting exams on their own. The exams/ assessment methods also need to reviewed in the light of NEP 2020. A student should be offered with flexible methods of assessment and one option of answering exams anytime apart from the college examination calendar. The colleges should develop an Examination Management System and focus more on student development rather than assessment.

At this point of time, all the above issues need to be addressed at the governance level of the autonomous colleges, as they get more academic freedom and have the ability to transform "autonomous" college into an "empowered autonomous" college.

References:

1. New Education Policy 2020, *https://www.mhrd.gov.in/*
2. Kulkarni P G, and Barot, A R, (2019). Methodology for Course Outcomes Attainment Analysis for an Engineering Course. *International Journal of Scientific and Technology Research*,8, 03, 16-19.
3. Evaluation Reforms in Higher Educational Institutions. (2019). University Grants Commission, New Delhi. ❑

Development Paradigms and Transitions: Contours of the Journey of Independent India

Vijay Kelkar, Chairman, National Institute of Public Finance and Policy, New Delhi delivered the Convocation Address at the 101st Convocation of Banaras Hindu University, Varanasi on December 23, 2019. He said, "We have to look beyond small moves to the evolving Idea of India. In India today, we are all impatiently running from one tweet to the next. We don't have the time to cogitate about where we have been. But we must tell each other stories about the journey that we have been on, so that we may understand our journey better, and bring greater wisdom to the next fork on the road. We all need to understand that since our independence our fellow citizens have been involved with one of the unique and perhaps the greatest development enterprise of the humankind. It is unique because our millions of citizens embarked on achieving multiple transitions simultaneously where other advanced nations did it sequentially and this was spread over a long period of a few centuries." Excerpts

I come here from Pune which, like Banaras, is also considered as the City of Learning. Of course, I am very mindful that in richness the heritage of Banaras is far greater than that of Pune. In our country, for centuries, Banaras has been a *'Punyabhoomi'* for its great achievements in both the secular and the sacred. In the fields of literature, arts, music and the profound philosophical explorations of the cosmos, the achievements here have been phenomenal. There is no place anywhere in the world that can possibly rival Banaras. It is in this land the venerable Gautam Buddha delivered his first sermon and uttered his noble Truths for the upliftment of the humanity. It is here the great Saint Kabir rendered his beautiful poetry imbued with love and deep human values, and who can ever forget the stunning philosophical reflections such as *Manisha Panchakam* by the great *Adi Shankaracharya* during his sojourn in this City.

So to make a pilgrimage to Banaras is indeed a dream come true for someone like me from Pune. Indeed, I am delighted to be at this unique temple of learning built by the legendary Mahamana Pandit Madan Mohan Malaviyaji with patriotic fervor and full of dreams for our great country. On this day of important Celebrations, I extend my warm congratulations to the all graduating students for their academic achievements and to their proud parents who have sacrificed so much for this grand success of their wards.

Today I want to share with you my reflections on our country's journey towards what our first Prime Minister Pandit Jawaharlal Nehru so eloquently expressed in his mid-night speech on 15th August 1947 as our "Tryst with Destiny." To my mind, this "Tryst with Destiny" meant wiping out the curse of poverty from our land and make our nation a prosperous and liberal Republic and thus contribute handsomely our due share to the wellbeing of every nation and to the advancement of global peace.

These days, one hears a great deal about the possible danger of India getting into "Middle Income Trap." What is this Middle Income Trap? Scholars of economic development have categorized countries as Poor Countries, Middle Income Countries and High Income Countries. Internationally accepted norms for these three categories are that the countries with less than 1000 USD per capita income are Poor Countries, while the countries between 1000 and 10,000 USD per capita income are considered as Middle Income countries and after you cross 20,000 USD per capita income, countries are considered as a Member of the Elite Group of High Income Countries. Now, the experience of the last 200 years or so is that it is easier for a country to make transition from a poor to the middle income category just like with our present level of 3000 USD per capita income India has done such a transition. However, the transition from the middle income category to a high income country has been elusive to many many countries. The most prominent examples of the countries who seemed to be trapped in Middle Income Level are from Latin America, Caribbean, and East Europe. Closer home, in Asia, Japan and Korea are the only two countries that have become High Income countries and other countries from our continent are still in the Middle Income Category. What about our country? How we should ensure that we achieve the transition to a high income prosperous nation and thus redeem our freedom fighters generation's pledge.

In the early years of our independence at a time when we were fresh from the excitement of the freedom movement, where the Indian National Congress challenged the world's most powerful empire and won. Our countrymen were all full of hope about what was going to happen and today I would like to narrate important contours of our journey of the post-independence years.

Our Mahayajna (on महायज्ञ)

And in this narration, we will step away from the day to day news flow, and think about the big ideas that matter. We have to look beyond small moves to the evolving Idea of India. In India today, we are all impatiently running from one tweet to the next. We don't have the time to cogitate about where we have been. But we must tell each other stories about the journey that we have been on, so that we may understand our journey better, and bring greater wisdom to the next fork on the road. We all need to understand that since our independence our fellow citizens have been involved with one of the unique and perhaps the greatest development enterprise of the humankind. It is unique because our millions of citizens embarked on achieving multiple transitions simultaneously where other advanced nations did it sequentially and this was spread over a long period of a few centuries. I cannot tell you how privileged we are that in our life time we are getting an opportunity to be part of this truly "महायज्ञ."

The Audacity of our Founding Fathers

It is hard to even comprehend the India of 100 years ago, where our leaders like Gandhiji, and Nehru got going on building the freedom movement. It was an India of incredible backwardness. To give you one illustration of how things were, here is an astonishing fact: literacy in India in 1920 was 8 per cent. Today we're at about 75 per cent. We know how bad it is, that 25 per cent of India is illiterate. But can you even imagine an India where 92 per cent is illiterate? That was the starting point, where our founding fathers had the nerve to challenge the British, and also ambitions to envisioning what a free India would look like. They wanted India to aspire to be a great and prosperous Democratic Republic. The founding fathers of our republic drew their inspiration from our syncretic civilizational heritage as well as from the French Revolution, American Resolution and the Revolutionary Magna Carta and most importantly from the robust good sense of the people of India.

For 30 years leading up to independence, some of the best minds in India, and from outside the country, thought hard about the nature of government in free India and the needed economic, political and social transformations, all to be achieved simultaneously and not sequentially as done by the West.

The economic transformation involved harnessing the energy of free people to innovate, to compete, and thus create firms inside which high productivity would be obtained. At the time there was a shortage of capital, so they had to also plan out the 'primitive accumulation', the early creation of the capital stock.

The political transformation involved going from power in the hands of a few colonial masters and ICS officers to a liberal democracy, with the dispersion of power across millions of people. Democracy is the institutionalized system of checks and balances, and the rule of law. A liberal democracy involves voting and elections, of course, but it is much more than that. The essence of a liberal democracy is a system of dispersion of power, of pitting interest against interest, of the rule of law. As Fareed Zakaria says, the courts are probably more important to democracy than the elections. One cannot overemphasize the uniqueness of an independent India adopting a system of liberal democracy at its inception even when it was beset with the mass poverty and mass illiteracy. No other country had attempted such a miracle.

The social transformation involved the frontal attack on the mistreatment of our women, the dehumanizing caste system and the profound neglect of *adivasis*. All over India, we needed to set off revolutions of aspirations and individual agency, so that women, the *bahujan* as Dr. Ambedkar described, and *adivasis* would think for themselves and live life on their own terms, without being gripped by traditional or oppressive social mores.

So 100 years ago, our founding fathers started from 8 per cent literacy, and dreamed up a work plan of fighting the mightiest empire in the world, and setting off the economic modernization, the political modernization and the social modernization of India, all at once. Nobody can accuse them of setting their sights too low! The best minds of India set about dreaming about how the Indian state would work, with these perfectly audacious goals.

And the optimism of that moment was overwhelming. Most people in the Congress, at the

eve of independence, were certain that in about two generations, or about 50 years, India would catch up with the advanced countries of Europe. We were completely committed to the goal of achieving levels of freedom and liberal values, prosperity comparable to the then advanced countries within about two generations. Towards this, they adopted what I call the "First Development Paradigm."

The First Development Paradigm

We have to also remember that this was a very difficult time in the world. From 1914 to 1950, there was great economic and political turbulence in the world. Here in India, we faced the violence of Partition, a war in 1948 and the distortions of a colonial economy engaged in a freedom struggle.

This first development paradigm was led by Nehru, Mahalanobis, Pitambar Pant, Prof. Sukhamoy Chakravarty and others. It involved a leadership role for the government in many aspects of society. Gandhiji thought this was a bad idea, and the future proved his hesitations regarding the role of the State rather prescient. But I am going ahead of the story.

This Nehruvian strategy gave the government the "commanding heights" of the economy, with a large public sector, and myriad state initiatives. It was the golden age of our belief in government as being good, of government as being benevolent, of government playing a leadership role in the evolution of the country. The early decade after independence worked rather well, compared with the previous decade. Many good things in India today have come from the wisdom of that period.

But the excessive control and domination by the government worked out poorly. Within less than two decades. This approach led to a license-permit-raid *raj*, and all the problems that go with this. Our relative neglect of agriculture and primary education aggravated these problems. And this set the stage for the dark days of economic and political instability. In succession, we had a series of disasters: the 1962 war with China, Nehru's death in 1964, two consecutive droughts and our living off food sent by the Americans as aid, and bank nationalization in 1969. Despite these dire conditions, Indira Gandhi still won well in the elections of March 1971. Her power was exacerbated by winning the war in December 1971. This concentration of power rapidly gave an economic collapse, and then we had the collapse of personal freedom with the 1975 emergency. By this time, it was very clear, that the First Paradigm had gone dysfunctional and we need a different approach and this led to the adoption of what I call the "Second Paradigm."

It is important to see the long lags in the development and the impact of ideas. The elements of the First Paradigm were built from 1920 to 1947. They worked well for about a decade, and then the cumulative impact of many decisions generated stagnation.

The Second Paradigm

The Second Paradigm was developed by thinkers from the mid 1960s onwards. Critical elements of this were built by the Ph.D. Thesis of Manmohan Singh and many other thinkers such as Arun Shourie, Abid Hussain, Jagdish Bhagwati and T. N. Srinivasan. These thinkers were acutely aware of India rapidly falling behind other dynamic economies of East Asia. These countries achieved great success in exploring export opportunities. For accelerating growth and removal of poverty, our reformers argued in favour of trade liberalization, scaling back the license-permit-raid raj, a flexible exchange rate, and a greater role for the private sector and linking actively with the global economy.

These ideas were put into practice, slowly, from 1977 onwards, with Morarji Desai as PM and changed course in Indian economic policy, gradually and carefully. Trend growth rose from 1979 onwards.

Through the 1980s, the baton was passed to Indira Gandhi and Rajiv Gandhi, who carried forward these ideas. This gave strong growth for some time, but we landed up with a Balance of Payment crisis in the late 1980s. That set the stage for the remarkable policy initiatives and reforms led by P. V. Narasimha Rao, Dr. Manmohan Singh and many others. With his sagacious policies, Prime Minister, Atal Bihari Vajpayee, gave further momentum from 1999 to 2004, kicking off perhaps the greatest growth run in India's history.

From 1991-2011, we got growth of a kind that we have never seen before. The Second Paradigm thus involved thinking from the 1960s onwards, and delivered the growth episode of 1991-2011.

And, then, the Second Paradigm slipped. For some years leading up to 2011, a series of actions came about, which changed the confidence of the private sector. Three kinds of things went wrong.

First, extensive meddling in the economy by the government continued. The Government increased the use of protectionist measures dampening the growth impulses. We also remain beset with micro management of the economy.

Second, these powers of intruding into the economy by the government are wielded with low rule of law. This creates business model risk. A person can build a business, with great effort, but the very business model can be destroyed overnight because the government comes up with some new intervention into the economy, often without warning such as retrospective tax of 2012, which is a classic example of adversely affecting the business confidence.

Third, the investigative agencies have become a serious problem. There is now an alphabet soup of agencies who can come make life difficult for a private person. Big companies have the resources to hire lawyers and accountants and deal with these threats. But for a medium sized company, an income tax raid that leads to Rs.5 to Rs.10 Crore in legal fees can lead to shutting the company down.

These three problems have come together, and changed the risk/reward tradeoff as seen by private persons. As a consequence, dynamism of private investment as well as exports declined. We now see this clearly in many data series. Trend growth went down since 2011.

It is important to see that trend growth did not decline in 2011 owing to actions taken in 2011. Many developments in policy and the economy came together, to a point where the private sector lost heart, and we see a decline in private investment from 2011 onwards.

Reversing of this decline in trend growth is one of the most important challenges facing India. High economic growth is essential for our society. We will fare best on meeting our challenges of the social and political modernization if these are done in the context of high economic growth and this requires a new Third Paradigm for Development.

As an example, a central feature of social modernization is women leaving the home, going to study and work in a new city. Similarly, the essential feature of social modernization is women leaving the home and going out to work every day. This labor force participation of women comes about the best when there is high GDP growth. When growth falters, the women are the first to exit the labor force. In most of North India, women's labor force participation is now comparable to the levels seen in Saudi Arabia. In my view, this is one of the greatest failures of ours in the post-independence period.

Long years ago, we made a tryst with destiny, and we must find our way out of these dark woods.

The Third Paradigm

What will this take? My colleague Ajay Shah and I have recently written a book on this question. This book is called *In Service of the Republic: The Art and Science of Economic Policy*. You must of course go and read the book! But I will preview some of our key ideas here. These ideas are drawn upon the work of many outstanding social scientists, economists and political theorists mainly from India who have been carefully studying developments in India as well as the recent advances in economic science. Our book is an exploration towards identifying the Third Paradigm. Third Paradigm involves a complete transformation of the formulation and implementation of economic policies and also fundamentally to strengthen our Liberal Republic. The foundation of liberal democracy, and prosperity, is individual freedom. We must strengthen the foundations of personal freedom and economic freedom. This requires a substantial reduction of government intervention in the economy.

The technical achievements of the field of public economics have created important knowledge about knowing when there is a need for government intervention. There is a nice and clear concept called "market failure" which guides us on when government intervention can help. In all other situations, no government intervention is required. We in India will do well to remove all these other government interventions.

Suppose market failure is indeed present, and we want government intervention. As an example, consider the air quality crisis in North India. Here, we run into the barrier of state capacity. We may ask a state agency to do something, but most of the time, the Indian state has low capabilities and the required work does not get done well. The central challenge in Indian politics and economics is to grapple with this problem of low state capacity.

The path to state capacity lies in reining in executive discretion. There is too much arbitrary

power in the hands of officials. We need to design laws and government organizations with much greater care, so that coercive power is used sparingly and wisely. Government agencies should have to first prove themselves with high levels of capability and high levels of checks-and-balances, before being given the power to spend or the power to coerce. The income tax department should get British-style powers to raid a person only when we achieve British-style state capacity and rule of law, with strong protections of private persons.

In India today, we are veering towards "the administrative state", which essentially means the rule by officials who possess arbitrary power, and who creep into legislative and judicial functions. We need to push back against this. Laws must be drafted through negotiation in the legislature, and not by the joint secretary. We need a much better functioning judiciary. And the arbitrary power of officials needs to be replaced by a rule of law system with elaborate checks and balances, which give protections to private persons.

These are the key ideas that need to go into the Third Paradigm that our thinkers need now to construct. These are the requirements of India at our present state of development, where a middle income economy has emerged, where weaknesses of the state have created fear in the minds of private persons who have retreated into low investment and consequently to deceleration of productivity growth and national income. Addressing these problems will put us on the path of growth over next few decades and thus will become an advanced and high income economy.

The essential features of the First and the Second Paradigms are principles, and a conceptual framework. Once the framework is understood, there is the practical process of looking at the short term situation and taking practical actions.

In similar fashion, the third wave or policy paradigm is about ideas and principles. The First Paradigm was developed through a process of debate from 1920 to 1947. The Second Paradigm was developed through a process of debate from 1964 to 1977 and then all the way to 1991. In similar fashion, we must embark on a long journey of ideas, to debate the elements of the Third Paradigm, and flesh it out from high ideas into a practical program of action. This is our task in India today.

This Third Paradigm in the Idea of India is not the task of any one discipline. It requires inter-disciplinary work between public economics, law, public administration, political economy and political science. All of us, across these multiple disciplines, have to break heads, and teach each other, in order to understand the problems that we face and solve them.

Dear Friends, I cannot emphasize strongly enough great importance of the concept of liberal India of our founding fathers. This pledge of our founding fathers has to be renewed by every generation because without that multi-cultural, multi-ethnic, multi- lingual land of ours will be unable to fulfill its truly great potential. On this, I hope BHU will not falter but once again become a beacon of hope and enlightenment and thus fulfill the dreams of Mahayana. In present turbulent times, BHU must remember and fulfill its *Dharma*.

I thank you for your attention ❑

STUDENT COLUMN

The Data Protection Bill--2019: A Critical Analysis

Arnav Mittal*

The Personal Data Protection Bill--2019, (hereinafter referred to as 'The Bill') was tabled in the Parliament in December 2019 as per the reports. The Bill which provides a legal framework for the protection of personal data of every Indian citizen was developed consequent to the landmark judgment declaring Right to Privacy as a Fundamental Right, a judgment delivered by the Honorable Supreme Court of India[1], wherein the court held that right to privacy comes very well within the ambit of Article 21[2] of Constitution of India and was drafted by a high powered nine-member expert committee under the chairmanship of Justice (Retd.) B. N. Srikrishna.[3]

So far, the issues relating to data protection were falling under the purview of Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011 under Information Technology Act, 2000. However, the rapid changes in the technological field in the recent past necessitated a separate Act for regulating the protection of data. India houses the maximum number of internet users in the world[4], followed by China, which all the more justifies the need for introduction of such a Bill. The Indian Bill is mostly inspired from the European Union (EU) --- The General Data Protection Regulations (GDPR), 2016 and a number of provisions are borrowed from the same.

The Bill applies to every citizen of the country ranging from an individual to the State, including the corporate entities, private and governmental bodies. The Bill tries to establish and regulate the relationship between the people whose data is collected, i.e. the Data Principals; the ones who collect this data, i.e. the Data Fiduciaries and the private/public entity which processes this data, i.e. Data Processors. It proposes the establishment of Data Protection Authority of India (DPAI), as the original court of jurisdiction, and the Appellate Authority which shall admit the appeals filed against the orders of DPAI. The appeals filed against the orders of the Appellate Authority shall lie with the Supreme Court.

** Final Year Student, BBA LLB (Hons.), Smbiosis Law School, Pune -411014 (Maharashtra). E-mail: arnav.mittal@symlaw.ac.in.*

Key Features and Analysis

Firstly, the Bill provides for fair and reasonable manner to use the information of data principal by data fiduciary, however the bill nowhere defines what actually constitutes to be "free and fair manner",[5] thereby giving the Data Protection Authority absolute discretion in regards to determining the same. It is proposed that the Bill must contain a proper clear cut definition on the said term, so that it is easy to determine whether a particular action falls within its purview or not and thereby reducing the absolute power that has been conferred upon the Authority as of now.

Secondly, the Bill has created a few exemptions[6], whereby the data can be used by the State ignoring the provisions mentioned in Chapter II (except section 4), Chapter III, Chapter IV, Chapter V, Chapter VI, Chapter VII (except section 31) and Chapter VIII. The above mentioned provisions more or less form the essence of the Bill. As The above exemptions are only permitted in case the processing of the personal data is in interest of - "security of the state"[7]; or in interest of "Prevention, detection, investigation and prosecution of contraventions of law"[8]; or in interest of "Processing for the purpose of legal proceedings"[9]; or in interest of "Research, archiving or statistical purposes"[10]; or in the interest of "Personal or domestic purposes"[11]; or in the interest of "Journalistic purposes"[12] The exclusion of the provisions which form the very basis of this Bill for the matters pertaining to the above issues can be detrimental to the right to privacy of an individual. It must be ensured that the said restrictions are well within the ambit of the guidelines as laid down in K S Puttuswamy case.[13] The Bill doesn't define "research purpose" but in case of "journalistic purpose", it gives out a definition which is so wide that it is prone to be misused. It is proposed that the definition of each and every term mentioned in the section should be made explicit and the number of exemptions that are being proposed by the bill must be reduced. This will in turn help in implementing the Bill in its letter and spirit.

Thirdly, the Bill also proposes that the consent of the data principal is not required to be obtained in cases where the State is providing any benefit/service to the principal and in cases where it involves the issuing of any certificate, license or permit.[14] The problem that arises here is that, since India being a vast country with just 34 per cent people having access to the internet, there are chances that the information which is being processed is not an updated information and may result in errors while issuing the above listed documents, thereby causing inconvenience to both the government as well as the principal concerned. It is proposed that the State should take express consent of the principal even while proving benefits of schemes as well as while providing the licenses and permits as there may be instances where the information of principal concerned has substantially changed and the same has not been updated with the fiduciary's database, thereby increasing the chances of giving away a wrongful benefit or preventing the rightful person from getting the benefit that he deserves.

Fourthly, the Bill allows the data fiduciary to keep a copy of the data of principals within the territory of India.[15] This shall discourages and negatively affects the investment prospects, because, such a provision will compel the companies to form a duplicate server so as to maintain the database, which entails a good amount of cost, thereby increasing the cost for investor, especially foreign investor. In the whitepaper provided by the central government asking for the public opinion, there were a number of companies, both domestic as well as foreign which addressed this particular concern in the Bill.[16]

It is proposed that the requirement of the maintenance of data within the territorial jurisdiction of the country should be dispensed with as there are numerous instances of hacking which will subject such record keeping to high vulnerability to cyber attacks, questioning the very existence of the Bill.

The fifth major feature of the Bill relates to Personal Data Breach.[17] The Bill states that in case of breach of personal data of any data principal, the same needs to be informed by the data fiduciary to the Data Protection Authority, who in turn shall have the discretion to whether to order the data fiduciary to inform the data principal or not. The discretion rests on the premise that whether the data that has been breached can cause any harm to the data principal in any manner.

It is felt that this is just an arbitrary power with no practical standing in the law. Not informing the principal about the breach of his/her personal data at the first instance, seems to be very unjust and discretionary on part of the Authority. The data being breached is that of the principal himself and he should have the first right to know about the same. This particular provisions does not augur well with the very premise of practicality upon which this bill is introduced.

The sixth critical feature of the Bill is the inefficiency of the provision dealing with the right to be forgotten.[18] The Bill states that the data principal has the right to be forgotten and his data can be erased once the purpose for which it was collected is accomplished, by writing an application in regards to the same in the prescribed manner. However, once the data principal files an application, it is not definite that the information will be erased but its upon the discretion of the Adjudicating Officer to whether ask the data fiduciary to erase the information or not, thereby more or less making the said "right to be forgotten" inoperative. It is proposed that the power of the Adjudicating Officer should be reduced significantly. Giving such absolute powers to the Authority may lead to its misuse.

Finally, two new authorities have been proposed to be setup under the bill, namely the Data Protection Authority of India (DPAI)[19] and the Appellate Authority.[20] It is observed that the complaint at the first instance is filed with the Adjudicating Officer. It is important to note that the said officer in question is appointed by the central government who has control over his term of appointment, the jurisdiction and even the procedure that needs to be followed by such officers. Even in the next stage of proceedings, where the appeals to the orders of Adjudicating Officer are addressed, i.e. the Appellate Authority, the central government has been vested with the power to decide upon the qualifications, term of office, allowances and other terms and conditions of the appointment of the chairperson as well as its members. Here it can clearly be seen that the first two stages of the adjudicating process is more or less in favour of the government and thereby not providing a level playing field.

It is proposed that the selection of the members of these bodies shall be done by a proper impartial committee comprising of the Prime Minister, Chief Justice of India (or his nominee) and the Leader of Opposition (Lok Sabha), who shall take the decision after taking the advice from the outgoing chairperson of

the authority concerned, if any. This model is followed in various judicial/police institutions so as to ensure that an unbiased and meritorious candidate is selected having no political affiliations whatsoever.

Conclusion

The Bill needs a relook to make it effective with an unbiased and impartial intent before it is rolled out. It is important that when the Bill is enacted into a Law, the very essence of the Bill should not get diluted and it must be ensured that it doesn't breach the rights of the citizens as envisaged in the Indian Constitution and by the Supreme Court of the country. The Data Protection Bills of other countries should be studied in detail in addition to the Laws of the European Union. The counterpart Bills of Australia and Canada are quite well written and certain provisions can be borrowed from them as well.

Footnotes

1 Justice K. S. Puttaswamy (Retd.) and Anr. v. Union of India and Ors. (2019) 1 SCC 1

2 Constitution of India, 1949

3 Justice Srikrishna Committee Report on Data Protection

4 www.internetworldstats.com

5 Section 4, Chapter II, The Data Protection Bill, 2018 (hereinafter referred to as "The Bill")

6 Chapter IX of The Bill

7 Section 42 of The Bill

8 Section 43 of The Bill

9 Section 44 of The Bill

10 Section 45 of The Bill

11 Section 46 of The Bill

12 Section 47 of The Bill

13 Supra 2

14 Section 13(2) of The Bill

15 Section 34 of The Bill

16 Chinmayi Arun, *Three Problems with India's Draft Data Protection Bill,* Council for Foreign Relations, Retrieved from https://www.cfr.org/blog/three-problems-indias-draft-data-protection-bill

17 Section 32 of The Bill

18 Section 27 of The Bill

19 Chapter X of The Bill

20 Chapter XII of The Bill

References

1. Chinmayi Arun (2018). Three Problems with India's Draft Data Protection Bill, Council for Foreign Relations. Retrieved from https://www.cfr.org/blog/three-problems-indias-draft-data-protection-bill
2. GoI (1949). Constitution of India, Government of India.
3. GoI (2018). Justice Srikrishna Committee Report on Data Protection, Ministry of Electronics and Information Technology, Government of India
4. GoI (2018) Draft Data Protection Bill, 2018. Retrieved from https://www.meity.gov.in/writereaddata/files/Personal_Data_Protection_Bill,2018.pdf
5. GoI (2019) Data Protection Bill, 2019. Retrieved from https://www.meity.gov.in/writereaddata/files/Personal_Data_Protection_Bill,2019.pdf
6. Supreme Court (2019) Justice K. S. Puttaswamy (Retd.) and Anr. v. Union of India and Ors.-*2018* 1 SCC 1
7. *www.internetworldstats.com*
8. *www.meity.gov.in*
9. *www.prsindia.org*

❑

Weekly E- Essay Series of Scholarly Articles on Reimagining Indian Universities

A 'Weekly E-Essay Series of Scholarly Articles on 'Reimagining Indian Universities' was launched on AIU Website on 15th May, 2020 as a part of the change which AIU seeks to bring about in the academics in this day and age of COVID-19. The essays scheduled for release in this series are in a broad range of fields covering a variety of topics pertinent to 'Reimagining Indian Universities' received from distinguished experts and authorities in the area of Indian higher education included in the Book 'Reimagining Indian Universities' edited by Dr. Ms.Pankaj Mittal and Dr Sistla Rama Devi Pani. In the series, every week one scholarly article written by an erudite scholar of Indian academia is being released on the AIU Website. The series was initiated with the essay of Prof Bhushan Patwardhan, Vice Chairman, University Grants Commission, India on 15th May, 2020.

The essays are unique, enlightening and inspirational. Those who are interested in reading these essays may browse AIU Website: www.aiu. ac.in. ❑

Online Short Term Course on Research Methodology

A five-day Online Short Term Course on 'Research Methodology in the Humanities' was organized by the Department of English, Rajiv Gandhi University (RGU), Arunachal Pradesh on the digital platform of Cisco Webex, recently. During E-Inaugural Ceremony, Prof. E Suresh Kumar, Vice Chancellor, The English and Foreign Language University, Hyderabad graced the occasion as the Chief Guest and Prof. Saket Kushwaha, Vice Chancellor, RGU presided over the function. The event was attended by about 138 participants both from different parts of India and abroad. Dr. P Narayan Piraji, Master of the Ceremony welcomed all to the virtual platform to join the 5-day Online Short Term Course on Research Methodology. "In the time when the world is facing the pandemic, every program is an opportunity in disguise", he said emphasizing on the importance of e-learning. He introduced the Chief Guest and President of the program and wished all the participants to have a fruitful experience over the next five days. Dr. KC Mishra, Head, Department of English welcomed the Chief Guest and highlighted the contribution of EFL University in the popularization of English Language Teaching Programs all over the world. He also welcomed Vice Chancellor, Prof. Saket Kushwaha, Pro Vice Chancellor, Prof. Amitava Mitra, Registrar, Prof. Tomo Riba and gave heartfelt thanks for their constant support and guidance towards the program. He welcomed all the participants and assured that the event would be very fruitful in providing guidance as to how research in the post pandemic phase would be taking newer grounds.

Dr. Chandan Kumar Panda, Coordinator of the program emphasized on the importance of methods in research and highlighted the intent of the course. He hoped that the outcome of the course would acquaint the participants with various methods, techniques and skills in conducting research in the Humanities and thus help them pursue better research and effective teaching. Prof. E Suresh Kumar emphasized on the importance of Ph.D. for pursuance of teaching in the higher education. He shared his views with the participants against negative criticisms and urged instead to focus on one's research, to run that extra mile, to disprove people who criticize.

Prof. Saket Kushwaha, in his presidential address emphasized on the importance of learning and teaching process even in the time of pandemic. He lauded the Chief Guest on his talk and reiterated on the need for academicians to continue their research in the face of any kind of hurdle. Prof. Oken Lego, Dean, Faculty of Languages and Prof. Tomo Riba, Registrar also commended the Department of English in its effort and wished success to all.

During Technical Session on 'Ethics in Research in the Humanities', Prof. Mundoli Narayanan initiated his presentation by addressing upon one's need to consider the way in which we practice our research and to how far they actually size up to the canons of ethical and moral behavior. The ethics in humanities as far as research is concerned, has not been well defined as it has been in Science and Social Science disciplines. Unlike the field of Science and Social Science, concerned primarily with the collection of objective data through the twin processes of observation and experimentation, and clear concepts regarding the protection of the identities of the research subject, Humanities involves a plethora of disciplines which are radically different from one another. There are more differences than similarities. The speaker defined Humanities as a study of human cultures, of human history and its diverse manifestations in terms of ideas, languages, texts, cultural products, events of the past and present, monuments, belief system, ways of life. The purpose of all humanities research should ultimately be directed towards the establishment of justice and equality. The method is usually carried out through the modes of analysis, interpretation and critique. In conclusion, Prof. Mundoli Narayanan highlighted on the fact that research in Humanities should do justice to the fundamental principles of Humanities. The session came to its close with an interactive session between the resource person and the participants.

Dr. Anindya Shyam Choudhury, Assam University, Assam delivered his lecture on 'Critical Stylistics and Its Potential in Humanistic Research'.

During his lecture, he tried to initiate a few ideas which can be dealt into further research using critical stylistics especially on language and media studies. He tried to define what stylistics could be and map the trajectory of what is known as traditional/ formalist stylistics and how it led to the emergence of functionalist stylistics. According to him, Critical Stylistics (CS) developed in reaction to the rise of Critical Discourse Analysis (CDA). He also referred to Jeffries 'Critical Stylistics' published in *The Routledge Handbook of Stylistics*. He explained that the main tools of Critical stylistics are known as textual-conceptual functions. These functions are name and describing, representing actions/events/ states, equating and contrasting, exemplifying and enumerating, prioritising, implying and assuming, negating, hypothesising, presenting others speech and thoughts. Dr. Choudhury explained these functions in detailed with the provision of examples and was of the opinion that these textual-conceptual functions are manifested in our daily linguistic discourse which means textual world is constructed. The session ended with the discussions over the queries put up by the participants and then Dr. D.S.G proposed vote of thanks to the resource person.

Dr. Lalit Khandare, Pacific University**,** Oregon, USA began his lecture on the protocol that is to be considered before one venture into the research from indigenous paradigm. This protocol includes the acknowledgement of the land of aboriginals, acknowledgement of the elders in the community and other concerned members. He also said that a comprehension of tribal knowledge systems and tribal epistemology are also essential components of indigenous research. Dr. Lalit explained the three important methods; quantitative, qualitative and the mixed and their characteristics. The speaker said that quantitative method is also known as deductive reasoning, where researcher first verifies a theory then tests hypotheses and defines and operationalizes variables derived from the theory and finally observes variables using an instrument to obtain scores. Similarly, he explained the qualitative method in Inductive Reasoning way. In addition to this, he talked about the other important methods such as case study method, ground theory, referring to the book called *The Discovery of Grounded Theory (1967)* by Glaser and Strauss. Dr. Lalit clarified the meaning of terminologies like Ontology, Epistemology and Methodology; ontology, he said is a belief in the nature of reality. Our way of being, what we believe is real in the world. He later discussed about the various indigenous research methods which includes research design, role of the research, data collection, features and ethical considerations. Finally, he gave the framework of Indigenous Research. Thus, the third session of the course summed up with the discussions over the queries and doubts put up by the participants.

Dr. Basil N Darlong Diengdoh, Dibrugarh University, Assam spoke during the session on 'Contextualising the Digital Humanities: Partnership and Partisanship Lie Ahead'. Dr. Diengdoh started his discussion on Digital Humanities (DH) in an arena of Interdisciplinary Research, which is in and around our country from at least 2010. The speaker quoted Mathew G. Kirschenbaum that digital humanities "is a wide-ranging", "free floating signifier", which include many aspects such as Digital Engagement that includes online modes of teaching, online modes of communication, use of ICT/ multimedia/ audio-visual component and so on. On the other hand, Digital scholarly practices include open access journals, MOOCs, pedagogy etc. The speaker mention about concordance, which is an alphabetical list of words in a book with an immediate context, some computer- assisted ways of preserving text, in essence, the encoding of textual features. He talked about the Ministry of Culture, Govt. of India, which took the initiative to digitally archive the historic visual and artistic culture of the country. The speaker concluded giving certain commendable examples of the Humanities Digitalisation initiatives: Larry Friedlander's Shakespeare project, Perseus project, Blake archive etc. He draws our attention to Giorgio Agamben"s the "Technological Barbarism" which works as a leading light for the present generation since it states that the whole world is virtualised and we cannot remain unaffected.

Dr. Gaurav J Pathania, Georgetown University, Washington DC, USA started his lecture with Ethnography and Cultural Studies. He stated that culture is the basic element of Ethnography. He discusses the characteristics of Ethnographic Research. It included cultural themes, culture sharing groups, shared patterns of behavior, language and beliefs, fieldwork: emic, etic and negotiation and so on. He discussed about participant observation stating the question is it different from the qualitative method. To define culture, he cited Raymond Williams how according to him, culture is the whole way of life.

Ethnography initially emerged in the Indian context, but the Indian scholars did not pay heed to it to pursue on the ethnic tribal people. Foreign scholars imbibed the exotic cultures of the tribal styles. Ethnography is a combination of inter-disciplined phenomena. Researchers have the ability to use whatever quote he likes and leave the other. He cited the example of Farnaz Fassihi, a journalist during the Iraq War who published her ethnographic data from 2002-2006 and used Holistic ethnography.

Prof. Bhagabat Nayak, Rajiv Gandhi University began with commenting that life writing as a literary genre is always neglected and research in this field in not preferred. When all other genres were already mature, life writing as an area of research was just a toddler. It is a large literary genre that includes, in its scope, biographies, autobiographies, diary entries, memoirs, letters, personal accounts, interviews, lectures, audio clips, oral history, testimony, dream analysis and so on. Research in this promising field flourished only after the World War II when new interest and craze in biographies and memoirs increased. Basically, research in life writing is an interdisciplinary activity that entails three aspects- context, phenomena and emotion. Context incorporates historical and geographical elements, phenomenon incorporates the trends that were prevalent and emotion that engages the writer's mind-study, emotions and sentiments.

Dr. D S Gupta, Rajiv Gandhi University began his presentation by enlightening the participants with an introduction to the field of ELT (English Language Teaching). Then, he laid out the nature, scope, importance and value of research in ELT. He defined ELT as the practice, activity and industry of teaching English as a foreign, second or other language. With the change in situation and context, ELT continues to evolve to better the learning experience of the learners. Further, the technical details of research design and data in ELT were discussed. He mentioned four research designs, Survey Research Design, Experimental Design, Case Study Design and Action Research. Survey Research Design includes the Non-probability (convenience, purposeful, snowball.) and Probability sampling (simple random, systematic random, stratified, cluster groups of strata).

Dr. Rajkumar Eligedi, Prince Sattan Bin Abdulaziz University, Saudi Arabia started his lecture by stating that if translation is not possible than travelling is not possible. Translation means transfer of meaning from one to another. In the early 1950's translation as a branch of study significantly emerged. Martin Luther the translation theorist comments that the study of translation begins through comparative literature. Translation studies are an inter-disciplinary area. Some critics argue that text is more important for translation. Dr. Eligedi in his session discusses that a translator always needs to follow certain ethics. He concluded his lecture by stating that translator's role is of utmost importance in translating a text. Translation studies are of significant importance as it bears the historical developments, goals, objectives and practices.

Prof. Amrit Sen, Visva-Bharati Shantiniketan delivered his lecture on what history has to teach mankind in a crisis-laden situation of today. Contextualizing the Great Plague/Black Death using Daniel Defoe's *Journal of the Plague Year 1722*, he showed how critical approaches could be applied to the Eighteenth Century novels to pose questions of trauma and its representation; containment and negotiation; memory and post memory; politics of marginality; narrative form and the rise of novel and ultimately, how relevant are these questions to the present context.

Prof. Sen made a very fascinating parallel between the Great Plague and COVID-19 pandemic. The great paradox of our modernity is that it lies within the Plague – it gave freedom to the slaves in terms of economy and mobility after the plague as the feudal system collapsed; as Foucauldian theory of power suggests, it saw the rise of the modern state power in all its complexity for the first time whether it was containment, uninterrupted control of the borders, or implementing disciplinary projects and people willingly surrendered to this power, to the segregation for the containment of the disease. The session ended with an intriguing and engaging Q&A session, in which the participants and the Research Person delved deeper into the subject matter of agency and subjectivity in Foucault's theory of power; how trauma destabilizes the assumed superstructures of society, the question of migrant labourers and humanity in the present times; the aftermath of the COVID-19 in terms of internationalism and nationalism interaction; and the fate of post COVID-19 literature.

Dr. Umesh Patra, Rajiv Gandhi University started with a question that how acting will fit in research methodologies, and why one would take acting?

According to him, every acting or performance is contextualized and metaphorically presence of social, political, cultural meanings. Performance is an act which is the result of practice and preparation, and everyone is acting from the moment they are born on this world, he gave the example of Shakespeare's, 'Seven stage' from the play 'As You Like it' where Shakespeare has present the different role of the human beings.

Dr. Milind Pandit, MSS College, Dr. Babasaheb Ambedkar, Marathwada University, Aurangbad, Maharashtra questioned the historiography and over emphasis on western influence. He asked why only western theories? When there are numerous instances of Indian texts on theories; such as *Stripurushtulna* (*1882*) by Tarabai Shinde as feminist writing. Indian theorists like The Buddha, Kabira, Mahatma Phule, and Dr. Ambedkar, etc. already dealt with the concepts of Deconstruction, Existentialism yet the western influence has overpowered them. He explained why this is so by giving the definitions of Colonisation and Colonialism in relation to Postcolonial Theory. While summing up his lecture, Dr. Milind said that the postcolonial theory is a European- American Construct and even the Subaltern Theory does not wholly suffice the need of marginalized group in Indian context. He was of the opinion that the Subaltern Theory is the 'brainchild of Antonio Gramsci', the text *Can the Subaltern Speak?* Is Eurocentric essay, and also the postcolonial homily is a hybridity of discussions. Thus, as a whole the concept of Postcolonial Theory, he said is a matter of desideratum. The session ended with the clarification of doubts put up by the participants.

Dr. Prachand Narayan Piraji facilitated the valedictory session of the online event. He welcomed and expressed his sincere gratitude to all the resource persons from India and abroad, and also participants. He was also thankful to the different resource persons who had participated and presented unique research methods and tools which enriched all participants and opened new avenues and opportunities in the field of research. Dr. K C Mishra invited and welcomed all the dignitaries of event. He expressed his sincere thanks to all the distinguished personalities whose constant enthusiastic support economically and morally which act as a catalyst for the grand memorable success of the online event. Dr. Beena S Nair was thankful to the coordinators for successfully completing the course. She highlighted the fact of maintaining sensitivity and necessary restraint towards social issues which normally provoke reaction in order to make the programme a successful one. Dilip Bhise, thanked the entire team for the success of the programme. He expressed that it was a great experience and a fruitful programme that enriched his intellect. Dr. Veena Sharma extended her heartfelt gratitude to the dept. of English for organizing this online STC programme, which according to her a worth attending one, which informed her with many aspects of research. Dr. MIlind Pandit thanked Department of English, for the honour providing him a platform to participate as a resource person in the online STC. Dr. C K Panda presented the brief report of the five days online course and thanked all the officials for their guidance and support. Dr. David Pertin, Joint Registrar (Academic and Conference) expressed his satisfaction over the success of the course. He mentioned that learning knows no barrier and the online course organised by the English Department of English is an epitome of it. The e-valedictory session came to a closure with Vote of Thank proposed by Dr. P N Piraji.

Webinar on Various Health Issues during Lockdown

One-day Webinar on 'Various Health Issues during Lockdown' was organized by the University Institute of Health Sciences, CSJM University, Kanpur, recently. The *Prayatna* organization was the academic partner of the webinar. Around 1767 participants (UG/ PG/PhD Students, Teachers, Doctors, Medical and Paramedical Professionals and others) registered from all over the country and abroad. Three participants were from Bangladesh and two were from Nepal. Dr. Praveen Katiyar, Coordinator of the Institute introduced the Webinar to the participants and mentioned about its importance.

Prof. Neelima Gupta, Vice Chancellor, CSJM University, Kanpur spoke about various issues due to Corona Pandemic in her Inaugural Speech. She emphasized that to remain healthy is very important. During lockdown, various health issues like in patients with Diabetes and Hypertension and issues related to physical fitness have been rising and it is necessary that proper care be taken care of these patients. Moreover, such patients are more susceptible to COVID-19 and therefore, they need more protection. It is a call for the day that attention be focused on improving the immunity so that the populations are able to fight this deadly virus. She made an appeal to improve the human lifestyle, stay safe by adopting social distancing and enhance immunity. With these measures, we will definitely be able to overcome this viral disaster.

Dr. Mohsin Wali, Padma Shri Awardee and former Physician to the President of India, in his lecture told the participants about the current situation of COVID-19 in India and its management and safety measures related to Corona Virus Infection. He said, "Immunity of Indians is good, therefore, there is less death rate in India. China does not disclose the clinical picture and relevant management of COVID-19 to the world. It did not inform about many symptoms of corona infection occurring in China. Thus, no country is able to identify the exact treatment of this infection. Corona virus is giving a mixed picture. In some patients, anti malarial treatment is effective whereas in others, patients are responding to anti viral therapy."

Prof. Narsingh Verma, Professor, Department of Physiology, Head, Department of Family Medicine, Vice Dean, Faculty of Medicine, KGMU, President, Asia Pacific Society of Hypertension, President, UPDA, Secretary General, Indian Society of Hypertension and Indian Society of Chrono-medicine delivered a talk on 'Managing Diabetes Mellitus and Hypertension during Lockdown'. According to him, "Depression and anxiety spiked after corona virus lockdown announcement." he said that, in a study conducted by him on the day of announcement of lockdown, 38 per cent of participants reported significant depression and 36 per cent reported significant anxiety. On the day before the announcement, 16 per cent reported significant depression and 17 per cent reported significant anxiety. Across the week, the study found that 25 per cent of women and 18 per cent of men exhibited clinically meaningful symptoms of anxiety, 23 per cent of women and 21 per cent of men showed signs of depression, and 15 per cent of women and 19 per cent of men were stressed.

Both Hypertension and Diabetes are affected by anxiety and stress. Both are influenced by diet, physical activity, behavioral factors and sleep. Both require regular monitoring, daily drugs and frequent consultation.

While suggesting the Do's for Patients of Diabetes Mellitus and Hypertension during lockdown, he said, "Eat a calculated amount of calories to maintain the requirement of the body. Eat high fiber foods (whole grains, pulses, and all green vegetables) as well as green vegetables, fruits, etc. Eat a diet low in glycemic index which helps keep the blood sugars in the normal range. Mustard oil, corn oil, sunflower oil, groundnut oil, rice bran oil and gingelly oil can be preferred. Olive oil is best used for salads. Keep track of all the food you eat in a day. Ensure eating food at the appropriate time, appropriate amounts and in proper frequency. Drink sufficient amount of water and liquids. Sleep on time, maintain a proper sleeping time and period."

He also discussed about Dont's for these patients: Patients who are on insulin or oral hypoglycemic agents should not fast, because it may result in hypoglycemia (low blood sugar levels). They should not skip a meal assuming that it can be made up by consuming extra food at the next meal. This may result in low blood sugar and also blood glucose fluctuations which leads to microvascular complications. Do not eat white bread, chips, and pastries, which quickly increase blood sugar. Avoid processed foods as they are rich in salt and oil. Restrict fried and fatty foods. Restrict refined and starchy food items such as maida, rava, white bread, potatoes, other tubers, processed foods and meats. In shortage of stevia, do not use artificial sweeteners beyond the recommended quantity. If possible, switch over to sugarless tea/ coffee gradually.

In shortage of fruits, do not consume sweet-tasting fruits like Sitaphal (custard apple), chickoo, sweet bananas, grapes, mangoes, etc. Do not exercise on an empty or full stomach. Do not watch too much TV especially while eating food. Avoid table salt. Do not miss your medication. He said such patients should consult their family doctor on call, if needed.

Dr. Saran Jeet Singh**,** Fitness and Sports Medicine Specialist, Sports Psychologist, NCHM (UK), Fitness Trainer, ISSA (USA) delivered a talk on 'Lock Down and Role of Exercises'. He advised to remain physically active which is very important for health during the period of lock down. People are gaining weight due to lesser physical activity. He said to avoid this, people should opt for good life style habits like eating at the right time, eating right proportion of meals, drinking right amount of water, taking sound sleep, meditation to relax mind, yoga and stretching exercises to relax muscles and eliminate joint pain. People should do some easy resistance exercises to strengthen muscles and bones. People should also do some cardio vascular exercises for better heart and lung functioning.

Prof. GS Tomar, Professor of Kaya Chikitsa, Faculty of Ayurveda, BHU, Varanasi delivered his talk on the topic 'Ayurvedic Management of Diabetes Mellitus'. He told about various cereals and fruits beneficial in the management of Diabetes. He said

that diabetic patients should take oat in their diet. They should eat- *Maithi , Parwal*, *Karela, Jamun. Tejpat, Jeera, Sadabahar*, etc. He told that ayurvedic preparations, i.e. *Bsaant Kusmakar Ras, Shilajit, Amalki* and Yog are helpful in managing diabetes and to prevent organ damage by diabetes.

All the sessions attracted relevant questions from the participants. The Speakers attended to all queries and the webinar ended with a Vote of Thanks.

International Conference on Recent Trends in Developments of Thermo-fluids and Renewable Energy

A three-day International Conference on 'Recent Trends in Developments of Thermo-fluids and Renewable Energy' is being organized by the National Institute of Technology, Arunachal Pradesh in collaboration with Indian Institute of Technology, Guwahati during November 26-28, 2020. The conference intends to have deliberations on Thermo-fluids and Renewable Energy, also focusing on the applications of heat and work to engineering problems, fluid behaviour under the influence of thermal/ pressure gradients and energy systems. The exhaustive work being done by various achievers in the field of thermo-fluids and Energy systems is intended to draw established as well as young researchers, providing them an exposure to the recent developments in thermo-fluids and Renewable Energy. Speakers from premier institutions in India and abroad with a vast knowledge and experience in the field of thermo-fluids and Renewable Energy, who have been quite active in the field for a long time, will be delivering the keynote address and invited talks. The conference, thus provides a platform for mutual dissemination of ideas on thermo-fluids and Renewable Energy between researchers and industrialist. The themes of the Conference are:

- Aerodynamics.
- Alternate Energy.
- Bio Fuel.
- Bio Heat Transfer.
- Combustion.
- Computational Fluid Dynamics.
- Control Mechanism for Constant Power.
- Generation Distributed Generation.
- Electric Vehicle.
- Hybrid Power System.
- Energy Storage.
- Hydro Power System.
- Refrigeration and Air Conditioning.
- Solar and Renewable Energy.
- Stability and Transient Analysis Using Soft.
- Computing Techniques.

For further details, contact Organising Secretary, National Institute of Technology, Arunachal Pradesh-791112, Mobile: +919954905307/ +919485231981/ +91 9485230670, E-mail: *tfre20@nitap.ac.in*. For updates, log on to: *www.iitg.ac.in/ceer/tfre2020.*

Webinar on the Metamorphosis of Education

A Webinar on 'The Metamorphosis of Education' is being organized by NIIT University, Neemrana, Rajasthan on September 27, 2020 at 7:30 PM IST.

The impact of COVID-19 has shaken the globe like never before. It has created a sense of despair leading to stress and confusion among people. Education has taken a big hit resulting in closedown of all educational institutions. Educators worldwide are attempting to find answers to make teaching-learning effective. Schools, Colleges, and Universities are all resorting to digital learning. However, online learning is being dealt with in bits and pieces. Educators are still grappling over issues like 'student engagement', 'exhausted teachers', 'fatigue', 'lack of motivation' etc. Most of them are trying to replicate physical classrooms.

- Is physical classroom the best experience?
- How are parents and teachers coping?
- Do we need changes in curriculum, pedagogy, assessment?

The topics under discussion are curriculum, pedagogy, Assessment Post-COVID. For further details, contact Educatomic Core *T*eam, NIIT University, Neemrana, Rajasthan-301705. E-mail: educatomic@st.niituniversity.in ❑

ANVESHAN- Student Research Convention (Central Zone)

The Association of Indian Universities in collaboration with Jagran Lakecity University, Bhopal organized *Anveshan*: Student Research Convention of Central Zone during February 06-07, 2020at Jagran Lakecity University, Bhopal. Dr Amarendra Pani, Joint Director & Head of Research Division of Association of Indian Universities was the Chief Convener of the event which was coordinated by Dr Usha Rai Negi, Assistant Director, Research, AIU, New Delhi. From Jagran Lakecity University, Bhopal, Dr Vinay Joshi Director Research & IQAC was the host Convener. A total number of 180 Students from 29 Universities across central zone participated in the convention. A total of 89 innovative projects were showcased by students and their mentors who got recorded as highest participation in the history of *Anveshan* organized in central zone till date. Projects showcased in the event were indeed exemplary and expected to have significant impact on society

On February 06, 2020, the inauguration ceremony commenced. The ceremonial dais was honored by the eminent presence of Dr V K Dadhwal, Director, IIST and Chairman, Board of Management, Indian Institute of Space Science & Technology as Chief Guest, Dr Amarendra Pani Joint Director & Head Research Division, Association of Indian Universities as a Guest of Honor, eminent panel of jury and resource persons, Prof Anoop Swarup, Vice Chancellor, Prof Vivek Khare, Registrar, Dr Vinay Joshi Director, Research & IQAC Jagran Lakecity University also the Central zone *Anveshan*- 2019 Coordinator, Deans, Directors and faculties of various schools of the university also graced the occasion.

The inaugural ceremony commenced with Dr Vinay Joshi welcoming the participants, invited guests and other dignitaries. While sharing the ethos of Jagran Lakecity University, Dr Joshi highlighted that strengthening research acumen among students and faculty members has been on their priority list, He appreciated the overwhelming response received from the universities in Central Zone and mentioned that the research convention is one of the biggest conventions of central zone.

Prof Anoop Swarup, Vice Chancellor Jagran Lakecity University Bhopal, acknowledged the presence of Dr V K Dadhwal Chief Guest, Dr Amarendra Pani, Guest of Honor. In his address, Prof Swarup shared his valuable insights on research. He conveyed the message of importance of exchanging idea, collaboration and teamwork. Further, he connected the value of research in one's life and how quality in research changes the life on this earth. He advised all the student participants to actively collaborate and build a team to give a platform to their career and also explained how can an idea can make the world more creative and progressive.

Dr Amarendra Pani, Joint Director & Head, Research Division, Association of Indian Universities shared his thoughts and future in research. He gave a brief background of AIU explaining about its genesis, establishment, mandated objectives and activities conducted to accomplished its objectives. He shared that many reputed leading academicians who designed and drafted Indian education system like Dr Sarvepalli Radhakrishnan, Dr Jakir Hussain have occupied the coveted position as the president of AIU. He mentioned that AIU provides a structured platform to the youth for unfolding their talents in various fields In the past some of eminent Television personalities such as Kapil Sharma, Chandan Prabhakar, Sunil Pal, Sugandha Mishra and cricketers like Anil Kumble and Ajit Agarkar have proved their mettle through AIU Inter university sports tournaments and inter university Youth Festivals. He shared that the Research Division of AIU, as part of its capacity building activities, regularly organizes various seminars and conferences for strengthening Indian higher education. Last but not the least, he encouraged the participants to take part in such kind of events for giving research activities more prominence and visibility.

Dr V K Dadhwal shared his views upon Space Science &Technology. Dr Dadhwal expressed that he was feeling very energetic and young after seeing all the students and their enthusiasm in taking part of the convention and showcasing their innovative projects. He observed that this kind of activities are not only expected to give a push to research, this will also create interest. among other students to pursue their research

activities in a more serious and committed manner. He further cited some of his glaring experiences with IIST wherein he explained that two decade back India conducted space research He concluded his address by sharing the recent inventions in the space & satellites.

The inauguration of the convention was followed by exhibition and poster presentation which was inaugurated by Shri Hari Mohan Gupta, the Chancellor of Jagran Lakecity University Shri Abhsihek Mohan Gupta, Pro Chancellor, Prof Anoop Swarup, Vice Chancellor, Prof Dr Vivek Khare, Registrar Deans & Directors were present in the exhibition. In this round participant across the central zone universities exhibited their projects through poster presentation on specified parametersIn the second round of assessment the podium / oral presentations were held. Three subject experts in each area evaluated the participating projects in concerned areas. The objective of second round was to understand in-depth details pertaining to projects on evaluation parameters such as scientific principles, creativity, relevance, thoroughness, cost effectiveness, teamwork and skill based on the assessment against six structured and stipulated criteria the quality and usefulness of the various research projects presented in the convention during the two-days, jury members scrutinized and declared first, second and third prizes in different subject areas.

After the podium presentation, the valedictory function of the convention was held on February 07, 2020. Dr (Mrs) Pankaj Mittal Secretary General, Association of Indian University (AIU) graced the valedictory function as the Chief Guest, Prof V Vijayakumar Vice Chancellor National Law Institute University, Bhopal, Dr Sunil Kumar, Vice Chancellor, RGPV, Prof Dr Anoop Swarup, Vice Chancellor, JLU, Prof Vivek Khare Registrar, JLU, panel of jury and resource persons, Deans, Directors and faculties of various schools also graced the occasion.

Dr Vinay Joshi, Director Research and IQAC and the Convener of *Anveshan* 2019, presented a comprehensive report of the two-day convention and mentioned that this research convention is one of the biggest conventions of central zone. Prof Anoop Swarup, Vice Chancellor interacted with students and shared his valuable insights He congratulated all the participants and other dignitaries who were involved in the research convention. He said that if the education is worth in name, it is research, because without research education cannot sustain, so keep doing research give the importance to research in high education in all disciplines. Prof V Vijayakumar Vice Chancellor National Law Institute University and Dr Sunil Kumar, Vice Chancellor, RGPV shared their life experiences with students and motivated the young research.

Dr (Mrs) Pankaj Mittal Secretary General, Association of Indian University shared her valuable insights on research. She asked students to be curious and inquisitive regarding, whatever they learnt every day. She admired the participants for their enthusiasm towards innovation in her ceremonial address. Dr Mittal expressed thanks to the participating members in the event and wished them for bright future. Appreciated the efforts of Jagran Lakecity University for meticulous planning in organizing the event, she congratulated Prof Vinay Joshi, Director his hard work, dedication and team building for the entire programme. She also praised the Jagran Lakecity University for launching a souvenir where all the amazing projects are compiled.

The concluding remark was delivered by Prof Vivek Khare, Registrar and Dean Jagran Lakecity University, Bhopal. He lauded the efforts of Dr Vinay Joshi and his team to providing ample opportunities for all the participants to explore their career in research. He expressed his sincere thanks to Dr V K Dadhwal, Dr (Mrs) Pankaj Mittal, Dr Amarendra Pani, Chancellor Shri Hari Mohan Gupta Jagran Lakecity University, Bhopal, Pro Chancellor Shri Abhsihek Mohan Gupta Jagran Lakecity University, Bhopal all other who directly or indirectly supported in making the event a huge success. He especially thanked Dr Usha Rai Negi for coordinating the program from AIU side. Given below are the details of the winner projects selected from Central Zone.

Basic Science

S No	Name of University	Participants	Topic
1st	Pt Ravi Shankar Shukla University, Raipur, Chhattisgarh	Vidya Rani Singh	Fluorescence Turn-on and Ratiometric Sensor for ATP in Aqueous Solution
2nd	Sant Gadge Baba Amravati University, Amravati, Maharashtra	Abhinandan Sanjay Kolhe	Automatic Gas Leakage Safety Regulator

3rd	A K S University, Satna, Madhya Pradesh	Akhilesh Kumar Tiwari, Abhishek Verma, Prakash Chaturvedi	Alphanumeric Data Transfer Through Laser by Arduino

Engineering & Technology

S No	Name of University	Participants	Topic
1st	Jagran Lakecity University, Bhopal, Madhya Pradesh	Ashu Singh, Sourabh bakshi, shivamyadav	Dhwani: A Hand Gestures Recognition for Physically Challenged People
2nd	Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, Madhya Pradesh	Shreya Pohekar, Shivam Agrawal, Manu Jain	Ujjwal: A Mobile App for the Villagers
3rd	Sant Gadge Baba Amravati University, Amravati, Maharashtra	Supriya Prabhakar Shende	Intrusion Detection in Network Security by Deep Learning Method

Agriculture

S No	Name of University	Participants	Topic
1st	Dr Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra	Sneha Tulsiram Bute	Prototype for Biodeise Production from Soybean
2nd	Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, Madhya Pradesh	Rahul somkuwar Rahul Ahke	Solar Pestiside Sprayer
3rd	Sant Gadge Baba Amravati University, Amravati, Maharashtra	Kunal S Gawande, Shivprasad S Dhage	IoT Based Smart Irrigation and Water Monitoring System

Social Science

S No	Name of University	Participants	Topic
1st	Sant Gadge Baba Amravati University, Amravati, Maharashtra	Yash Gupta	Development of Herbal and Alternative Mosquito Repellent form Agricultural Waste
2nd	Jagran Lakecity University, Bhopal, Madhya Pradesh	Abhinav Saxena, Maitreyi Mittal, Fatima Rauf	Role of Dial Hundred in Emergency Situations and Crime Mitigation
3rd	Jagran Lakecity University, Bhopal, Madhya Pradesh	Dipika Singh Rathore, Surbhi Raipriya, Payal Sarkar	Art of Recycle

Health Science

S No	Name of University	Participants	Topic
1st	Guru Ghasidas Vishwavidayalaya, Bilaspur, Chhattisgarh	Shruti Pathak, Ashutosh Tiwari	V-Scope: A Wireless Device for Screening of Cervical Cancer
2nd	ITM University Gwalior, Madhya Pradesh	Aditi Sharma, Sakshi Ghosh	Mouth Ulcer Healing Gel
3rd	Sant Gadge Baba Amravati University, Amravati, Maharashtra	Sachin Sureshrao Deshmukh	Automated Diabetic Retinopathy Detection using Deep Learning

❑

THESES OF THE MONTH

SCIENCE & TECHNOLOGY

A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of July - August, 2020)

BIOLOGICAL SCIENCES

Food Science & Nutrition

1. Panwar, Deepesh. **Understanding the molecular basis of prebiosis of manno-oligosaccharides in probiotic *Lactobacillus sp*.** (Dr. Mukesh Kapoor), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Life Science

1. Arem Qayum. **Therapeutic potential and molecular mechanism of a novel β-boswellic acid analog in mono and combination therapy for targeting KRAS mutant colon cancer**. (Dr. Shashank Singh), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Chandrangadhan, Sajan. **Effect of bifidobacterial probiotics on alleviation of inflammation**. (Dr. Prakash M Halami), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

3. Chauhan, Alex Victor. **Detection of TLR9 polymorphisms and their association with STIs, cervicitis and cervical cancer**. (Dr. Neeraj Jain), Faculty of Applied Sciences, Charotar University of Science and Technology, Anand.

4. Dhanya, V. **Exploring the potential of canine induced pluripotent stem cells in stem cell biology and regenerative medicine**. (Dr. Darshan H Patel), Faculty of Applied Sciences, Charotar University of Science and Technology, Anand.

5. Gupta, Mehal. **Modulation of NLRP3 inflammasome - mediated sterile inflammation**. (Dr. G D Singh), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

6. Gupta, Sonam. **A study to evaluate the endoplasmic reticulum stress mediated signaling pathways in rotenone induced neurotoxicity**. (Dr. Sarika), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

7. Kushwaha, Ramesh Kumar. **Modulation of withanolides biosynthesis in *Withania somnifera* (L.) Dunal by plant-endophyte interactions**. (Dr C S Vivek Babu), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

8. Mishra, Akanksha. **Investigating the role of dopamine Dl and D2 receptors during adult neurogenesis in parkinsonian rats**. (Dr. Shubha Shukla), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

9. Mohanty, Alfa Sarita. ***Dillenia indica* L. bark extract mediated green synthesis of silver, gold and platinum nanoparticles and their applications**. (Dr. B.S. Jena), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

10. Rai, Ankita. **Studies on dermal toxic potential of a mycotoxin, zearalenone**. (Dr. Anurag Tripathi), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

11. Sharma, Disha. **Identification and characterization of circular RNAs**. (Dr. Vinod Scaria), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

12. Vikas Kumar. **Modulation of physicochemical properties of natural product/ phytopharmaceutical leads using formulation approaches**. (Dr. Ram A. Vishwakarma), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Life Sciences

1. Gurjinder Singh. **Analyzing kinase dependent and independent functions of EGFR and IGF-1R receptor tyrosine kinases in normal and cancer cells**. (Dr Mohd Jamal Dar), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Prasad, P. **Exploring stearidonic acid rich triacylglycerol biosynthetic pathway in Buglossoides arvensis using transcriptomic and lipidomic approaches**. (Dr. R V Sreedhar), Faculty of Biological Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

EARTH SYSTEM SCIENCES

Geophysics

1. Jaiswara, Nilesh Kumar. **Drainage pattern characterization of Brahmaputra river system in Eastern Himalaya to understand the role of gradation and tectonics in drainage evolution**. (Dr. Anand Kumar Pandey), Faculty of Physical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

ENGINEERING SCIENCES

Civil Engineering

1. Pradhan, Nibedita. **Analysis of smart functionally graded structures integrated with piezoelectric composites**. (Dr. Saroj Kumar Sarangi), Department of Civil Engineering, Siksha O Anusandhan University, Bhubaneswar.

Computer Science & Engineering

1. Bhadoria, Sanjay Singh. **Sentiment mining for technical students of effective learning**. (Dr. Dhanraj Verma), Department of Computer Application, Dr. A.P.J Abdul Kalam University, Indore.

2. Gambhava, Bhavikaben Maganbhai. **Evaluation and refinement of TCP's congetion control for performance enhancement in wired-cum-wireless environments**. (Dr. C K Bhensdadia), Faculty of Technology and Engineering, Charotar University of Science and Technology, Anand.

3. Panigrahi, Ranjit. **Design and development of a host based intrusion detection system with classification of alerts**. (Dr. Samarjeet Borah), Department of Computer Application, Sikkim Manipal University, Gangtok.

4. Vashist, Sahil. **Efficient location aware protocol for multi-UAV networks**. (Dr. Sushma Jain), Department of Computer Application, Thapar Institute of Engineering and Technology, Patiala.

Electrical & Electronics Engineering

1. Patel, Jaksankumar Dahyabhai. **Optimization of wire cut EDM process parameter using multi criteria decision making method**. (Dr. Kalpesh D Maniya), Faculty of Technology and Engineering, Charotar University of Science and Technology, Anand.

Electronics & Communication Engineering

1. Sakshi. **Efficient implementation of adaptive filters and classifiers using multilayer perceptron feedforward neural network**. (Dr. Ravi Kumar), Department of Electronics & Communication Engineering, Thapar Institute of Engineering and Technology, Patiala.

Metallurgical Engineering

1. Ashok, K. **Analysis and control of slag carryover during steelmaking**. (Dr. G.L. Mandal), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Physical Engineering

1. Maurya, Muni Raj. **Template assisted growth of nano heterostructures for sensor applications**. (Dr. Vijay Kumar Toutam), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Prakash, Nisha. **Development of hybrid photodetectors based on 2D materials and III-nitrides**. (Dr. S P Khanna), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Structural Engineering

1. Bharathi Priya, C. **Seismic vibration control of structures using magnetorheological (MR) damper coupled mass driver**. (Dr. N Gopalakrishnan), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Banjara, Nawal Kishore. **Fatigue life assessment and enhancement of concrete flexural members**. (Dr. K Ramanjaneyulu), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

3. Mallick, Shatabdi. **Governing creep mechanisms in cement paste containing fly ash-effect of fly ash content and role of water through microindentation studies**. (Dr. M.B. Anoop), Faculty of Engineering, Academy of Scientific and Innovative Research, Ghaziabad.

4. Sindu, B S. **Multi-scale investigations on development of nano-engineered cementitious composite**. (Dr. Saptarshi Sasmal), Faculty of Engineering Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

MATHEMATICAL SCIENCES

Mathematics

1. Basha, Hussain. **Analytical study of flow and heat transfer in non- Newtonian fluids**. (Dr. K V Prasad), Department of Mathematics, Vijayanagara Sri Krishnadevaraya University, Bellary.

MEDICAL SCIENCES

Anatomy

1. Thoudam, Bedita Devi. **Secular trend in the cephalometri C characters of the Meitei males of Manipur Valley**. (Dr. Binod K Tamang, Dr. S Jibonkumar Singh and Dr. Th Naranbabu Singh), Department of Anatomy, Sikkim Manipal University, Gangtok.

Biotechnology

1. Sharad Saxena. **Investigating microRNAs as potential target for matrix metalloproteinases during cardiac remodeling**. Department of Biotechnology, Jaypee Institute of Information Technology, Noida.

2. Vinay Kumar. **Identification and genetic validation of glutamine synthesase as a potential antilelshmanial drug target**. (Dr. Sushma Singh), Department of Biotechnology, National Institute of Pharmaceutical Education and Research, Mohali.

Dentistry

1. Shah, Sujay Bharatkumar. **Evaluation of periodontal health status, prevalence of tobacco use among healthcare professionals, knowledge, attitude and practices of tobacco control/cessation among healthcare professional of Ahmadabad City: A cross sectional study**. (Dr. Mihir N Shah), Faculty of Medical, Gujarat University, Ahmedabad.

Microbiology

1. Chanu, Nongmaithem Onila. **Occurrence of intestinal parasitic infections with gastrointestinal symptoms in the children of East Sikkim**. (Dr. T S K Singh and Dr. Sudip Dutta), Department of Microbiology, Sikkim Manipal University, Gangtok.

Pharmaceutical Science

1. Dubey, Kushagra. **Reverse docking studies of some indigenous phytoconstituents and their evaluation for management of diabetes**. (Dr. Revathi A Gupta and Dr. Arun Kumar Gupta), Department of Pharmaceutical Science, Dr. A.P.J Abdul Kalam University, Indore.

2. Jain, Gaurav. **Development and evaluation of transdermal patch of some antifungal drugs**. (Dr. Rakesh

Patel), Department of Pharmaceutical Science, Dr. A.P.J Abdul Kalam University, Indore.

3. Nagar, Rajesh. **Development, standardization and pharmacological evaluation of indigenous polyherbal formulation for the management of diabetes**. (Dr. Rakesh Patel), Department of Pharmaceutical Science, Dr. A.P.J Abdul Kalam University, Indore.

4. Sahu, Rajanikanta. **Pharmacokinetic interaction of tinospora cordifolia with co-administered antidiabetic drugs**. (Dr. Bharat Bhusan Subudhi), Department of Pharmacy, Siksha O Anusandhan University, Bhubaneswar.

5. Sisodiya, Shailendra. **Synthesis and bio-evaluation studies of new molecular motifs as potential topoisomerase II inhibitors**. (Dr. Sankar K), Department of Medicinal Chemistry, National Institute of Pharmaceutical Education and Research, Mohali.

PHYSICAL SCIENCES

Chemistry

1. Akula, Srinu. **Studies on metal-free electrocatalysts for oxygen reduction reaction in polymer electrolyte membrane fuel cells**. (Dr. Akhila Kumar Sahu), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Ayesha, Nadeem. **Layered double hydroxides and their derived functional nanomaterials for sustainable energy applications**. (Dr K. Sreekumar), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

3. Babasaheb, Shaikh Dada. **Design and synthesis of multisubstituted naphthalene diimides: Selfassembly and perovskite solar cell applications**. (Dr. Sidhanath V Bhosale), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

4. Banothu, Rammurthy. **Development of ECO-friendly protocols for oxidative halogenations and catalytic C(sp2)-C(sp3) bond esterification using ammonium halides and oxone**. (Dr. N Narender), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

5. Dhaware, Vinita. **Synthetic polypeptides and biopolymers: Synthesis, self-assembly and cellular interactions**. (Dr. Anuya Nisal), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

6. Dheer, Divya. **Design and synthesis of polymer based targeted drug delivery systems and studies towards the synthesis and anticancer potential of triazoles**. (Dr. Ravi Shankar), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

7. Dwivedi, Pravin Kumar. **Development of nanostructured metal oxide-carbon composites for rechargeable li-ion battery**. (Dr Manjusha V Shelke), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

8. Faheem Rasool. **Study towards stereoselective synthesis of medicinally important glycosides from sugar enol-ethers**. (Dr. Debaraj Mukherjee), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

9. Goswami, Limi. **Development of new synthetic methodologies for the synthesis of biphenyls, fused pyridines and thiophenes**. (Dr P Gogoi), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

10. Gundeboina, Narasimha. **Design, synthesis and surface functionalization of SPIONs for environmental remediation and biomedical applications**. (Dr. S.V. Manorama), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

11. Joshi, Abhishek. **Transannulation of triazoles and pyridotriazoles for the synthesis of fused heterocycle**. (Dr. S. Adimurthy), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

12. Kadam, Appasaheb. **Design & tactics for total synthesis of D2 receptor agonist quinagolide & development and application of on-water oxidation of furan in collective synthesis of bioactive natural products**. (Dr. Subhash P.), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

13. Krishnan, Deepithi. **Directed assembly of hierarchical supramolecular block copolymers**. (Dr. E. Bhoje Gowd), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

14. Manna, Anupam. **Design and synthesis of porous polymeric materials for sensing, separation and catalytic transformation of environmental pollutants**. (Dr. Sanjib Das), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

15. Mrathe, Yogesh. **Design, synthesis and crystallization behaviour of new borassus incorporated poly (lactic acid) composites and nanocomposites**. (Dr. M.V. Badiger), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

16. Naresh, Pogaku. **Development of novel methodologies for synthesis of sulfinates, sulfones, carbamates, oxazoles using TosMIC and α-oxygenated ketones by iodine catalysis**. (Dr. P Radhakrishna), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

17. Parthiban, V. **Studies on Nafion hybrid polymer electrolyte membranes with improved electrochemical selectivity for direct methanol fuel cells**. (Dr. Akhila Kumar Sahu), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

18. Prakash, K R. **Strategies to improve the performance of high-capacity layered cathode materials for lithium ion battery**. (Dr. A S Prakash), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

19. Rathod, Jayant. **Synthetic explorations into carbon-carbon and carbon-nitrogen bond forming reactions**. (Dr. Pradeep Kumar), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

20. Remya, R. **Solution processed transition metal oxides for optoelectronic applications**. (Dr Biswapriya Deb),

Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

21. Sajitha, M J. **Facile synthesis of plasmonic nanomaterials with improved characteristics for bio-photonic applications**. (Dr Yoosaf K), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

22. Santhosh. **Investigations on electrochromic properties of oxide semiconducting thin films prepared by laser ablation/spin coating**. (B. Subramanian), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

23. Sharma, Nidhi. **Chemical characterization and biological evaluation of polyphenolic compounds from *Arnebia and Hippophae***. (Dr. Saju Pillai), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

24. Shukla, Geetanjali. **High performance acidic and alkaline charged membranes for electrochemical processes**. (Dr. Vinod K Shahi), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

25. Sumina, N B. **Low temperature synthesis of wide spectrum active TiO2 for functional applications**. (Dr. Saju Pillai), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

26. Yadav, Rajkumar. **Titania-based nanomaterials for H2 production and CO2 utilisation using solar energy**. (Dr Anil K. Sinha), Faculty of Chemical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Physics

1. Arun, B. **Tuning the magnetic phase transitions and the magnetocaloric properties of rare-earth manganites for magnetic refrigeration applications**. (Dr. M. Vasundhara), Faculty of Physical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

2. Panigarhi, Jagannath. **ALD deposited single/ multilayer thin films for c-Si surface passivation**. (Dr. Vandana), Faculty of Physical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

3. Rathi, Ashutosh. **Interplay between quantum magnetism and charge dynamics in 3d and 5d magnetic oxides**. (Dr. G.A. Basheed), Faculty of Physical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

Polymer Science

1. Biswas, Bipul. **Preparation of colloidal chains and studies of their structure and dynamics**. (Dr Guruswamy Kumaraswamy), Faculty of Physical Sciences, Academy of Scientific and Innovative Research, Ghaziabad.

❑

INDIAN INSTITUTES OF TECHNOLOGY

BHILAI, BHUBANESWAR, BOMBAY, DELHI, (ISM) DHANBAD, GANDHINAGAR, GUWAHATI, HYDERABAD, INDORE, JODHPUR, KANPUR, KHARAGPUR, MADRAS, MANDI, PALAKKAD, PATNA, ROORKEE, ROPAR, TIRUPATI, (BHU) VARANASI, and

INDIAN INSTITUTE OF SCIENCE BANGALORE

Joint Admission Test for Masters 2021

ABOUT JAM

Joint Admission Test for Masters (JAM) 2021 will be held on February 14, 2021 (Sunday) for admission to M.Sc. (Two Years), Masters in Economics (Two Years), Joint M.Sc.-Ph.D., M.Sc.-Ph.D. Dual Degree, M.Sc.-M.S. (Research)/Ph.D. Dual Degree and other Post-Bachelor Degree programmes at IITs (Bhilai, Bhubaneswar, Bombay, Delhi, (ISM) Dhanbad, Gandhinagar, Guwahati, Hyderabad, Indore, Jodhpur, Kanpur, Kharagpur, Madras, Mandi, Palakkad, Patna, Roorkee, Ropar, Tirupati and (BHU) Varanasi) for the Academic Session 2021-22. JAM score will be used by IISc Bangalore for admission to the Integrated Ph.D. programmes. JAM score will also be used by other institutions like NITs/CCMNs for admission to their programmes. JAM 2021 is open to all nationals. However, foreign nationals will be required to satisfy the rules and regulations of the admitting institute(s) pertaining to the admission of foreign students.

JAM 2021 is being organized by IISc Bangalore. All correspondence related to JAM 2021 must be addressed to Organizing Chair, JAM 2021, GATE-JAM Office, Indian Institute of Science, Bangalore-560 012.

TEST PAPERS AND MODE OF EXAMINATION

JAM 2021 will have seven test papers, namely, Biotechnology (BT), Chemistry (CY), Economics (EN), Geology (GG), Mathematics (MA), Mathematical Statistics (MS) and Physics (PH) each of three hours duration. The test paper on Economics is newly added this year. For all the test papers, JAM 2021 examination will be conducted as a Computer Based Test (CBT) in ONLINE mode only. A candidate can appear in either one Test Paper or two Test Papers, subject to the restrictions of test schedule given below and by paying an additional fee for the second Test Paper.

Date and Day	Session	Time	Test paper code
February 14, 2021 (Sunday)	I	Morning*	BT, MS, PH
	II	Afternoon*	CY, EN, GG,MA

*Examination Time will be published on the website and printed on Admit Cards.

EXAMINATION CITIES/TOWNS

Agartala, Agra, Ahmedabad, Asansol-Durgapur, Bareilly, Bengaluru, Bhopal, Bhubaneswar, Chennai, Coimbatore, Dehradun, Dhanbad, Dibrugarh, Ernakulam, Faridabad, Ghaziabad, Goa, Greater NOIDA, Gurugram, Guwahati, Hissar, Hubli, Hyderabad, Imphal, Indore, Jaipur, Jalandhar, Jammu, Jind, Jodhpur, Jorhat, Kalyani, Kannur, Kanpur, Kharagpur, Kolkata, Kollam, Kottayam, Kozhikode, Kurukshetra, Lucknow, Madurai, Mangalore, Mohali, Moradabad, Mumbai, Nagpur, Nanded, Nasik, New Delhi, NOIDA, Palakkad, Patna, Prayagraj (Allahabad), Pune, Raipur, Ranchi, Roorkee, Shillong, Siliguri, Thiruvananthapuram, Thrissur, Tiruchirapalli, Tirunelveli, Tirupati, Vadodara, Varanasi, Vijayawada, Visakhapatnam and Warangal.

Note: JAM 2021 Committee may add or drop any city or town as a test centre at its discretion.

INFORMATION BROCHURE AND APPLICATION PROCEDURE

The Information Brochure and all other information related to JAM 2021 will be updated time to time on the website: **http://jam.iisc.ac.in**. A candidate can register and apply ONLINE only for JAM 2021 from **September 10, 2020 to October 15, 2020**. The application fee can be paid online only. **The Application fee is non-refundable. The details of application fee are given below.**

Group/Category	One Paper Fee ( )	Two Papers Fee ( )
Female (All Categories)/SC/ST/PwD*	750/-	1050/-
All Others	1500/-	2100/-

** Person with Disability*

TEST PAPERS AND AVAILABLE ACADEMIC PROGRAMMES

To know about the JAM test papers and the available academic programmes at various institutes, please refer to the JAM 2021 **website http://jam.iisc.ac.in**

ELIGIBILITY REQUIREMENTS FOR ADMISSION

In the qualifying degree, the aggregate marks or CGPA/CPI without rounding-off (taking into account all subjects, including languages and subsidiaries, all years combined) should be at least 55% or 5.5 out of 10 for General/OBC (NCL)/EWS category candidates and Foreign nationals, and 50% or 5.0 out of 10 for SC/ST and PwD category candidates (if CGPA/CPI is on a different scale, it would be linearly mapped to a scale on 10).

Note: Proof of having passed the qualifying degree with required eligibility, as specified by the admitting institute, should be submitted by September 30, 2021. Reservation policy is applicable as per the Government of India norms.

MINIMUM EDUCATIONAL QUALIFICATION(S) FOR ADMISSION

Please refer to the JAM 2021 website: **http://jam.iisc.ac.in**

JOINT ADMISSION PROCEDURE

Admission to the above-mentioned academic programmes in IITs for the Academic Session 2021-22 will be made on the basis of All India Merit List of JAM 2021. Candidates who qualify in any test paper of JAM 2021 shall be eligible to apply for admission to all the academic programmes corresponding to that test paper, provided that they also satisfy the minimum educational qualifications and the eligibility requirements as specified by the institute(s) in which the admission is being sought. After the declaration of JAM 2021 results, qualified candidates should apply online to the Organizing Institute (IISc Bangalore), specifying their preferences for the programmes for which the admission is sought. **Candidates should note that being in the merit list of any test paper neither guarantees nor provides any automatic entitlement for admission.** Further details regarding admission, prescribed fees, etc. will be updated on

the JAM 2021 website.

Organizing Chair, JAM 2021

GATE-JAM Office, Indian Institute of Science, Bangalore – 560 012

Phone: (080) 22932392, E-mail: jam@iisc.ac.in, Website: http://jam.iisc.ac.in

ANNOUNCEMENT

Special Number on Implementation Strategies of National Education Policy -2020

A **Special Number of the University News** on the theme **'Implementation Strategies of National Education Policy-2020'** is being brought out during the first Week of November, 2020.

The **Special Issue** will cover articles of eminent educationists and policy makers. Readers of the University News are also invited to contribute to the Special Number by submitting papers/articles on above theme by October -10, 2020. The papers will be published in the Issue subject to the approval of the Editorial Committee of the University News.

Manuscripts may be emailed to the Editor, University News, Association of Indian Universities, AIU House, 16 Comrade Indrajit Gupta Marg (Kotla Marg), New Delhi-110 002. E-mail: unaiu89@gmail.com /universitynews@aiu.ac.in/rama.pani2013@gamil.com, Fax: 011– 23232131 on or before October -10, 2020.

GUIDELINES FOR CONTRIBUTORS

The *University News*, a Weekly Journal of Higher Education, provides an avenue for publishing Articles on topics related to different dimensions of higher education; Convocation Addresses; Book Reviews; Reports on Seminars, Symposia, Conferences, Refresher and Orientation Courses and various other events held in the university campuses; News related to higher education; and Communications on new ideas, concepts, innovations and recent trends in higher education, by its practitioners and stakeholders. Following are the guidelines applicable to contributions:

- 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.
- Manuscripts including tables, figures and references should be around 3000-4000 words for articles and 600 words for Communications.
- All the manuscripts should type in double-space with 12 point font and ample margin on all sides on A 4 size paper.
- The cover page should contain the title of the paper, author's name, designation, official address, address for correspondence, contact phone/fax numbers and e-mail address.
- The main text should not contain footnotes. 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.

Authors are responsible for any copyright clearance, factual inaccuracies and opinions expressed in their paper.

- No fees is payable to submit or publish in this Journal.

Editorial Policies

The final decision on the acceptance or otherwise of the article rests with the Editorial Committee and it depends entirely on its standard and relevance. The article accepted may be modified to meet the journal's standards of contents, presentation and style. Authors may also be requested to revise their manuscripts before they can be accepted for publication. Correspondence in this regard will be done with the first named author unless otherwise indicated.

The Editor is free to make editorial corrections in the content as well as title of the article and change the title in accordance with the content of the article as well as the overall theme of the Issue.

Maximum time taken for processing the article is six months. Contributors are free to send the material to any other publication after a period of six months from the date of their submitting the article to the University News, if they do not receive any intimation from AIU.

Author will receive two complementary copies of the Journal immediately after its publication.

AIU may re-use the articles published in the University News for its various other publications including University News.

AIU may extend courtesy to other journals or websites to use the articles published in the University News if due credit is given to the author(s) of the article(s) and the University News.

Only those manuscripts will be published which are sent through E-mail: *unaiu89@gmail.com* **or** *universitynews@aiu.ac.in* **or** *rama.pani2013@gmail.com* to Editor. For Further queries contact :

Dr. S Rama Devi Pani
Editor,
University News, Association of Indian Universities
AIU House, 16 Comrade Indrajit Gupta Marg (Kotla Marg) New Delhi- 110 002
Ph No 011-23230059 Ext.240 & 011 23230059