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## FROM CHAIRMAN'S DESK



### **Efficacy of Online Classes**

I am delighted, as Chairman of BITES, to place the 75th newsletter in your hands. I would be highly obliged, as ever, to receive your valuable feedback.

Covid-19 / Corona pandemic, erupted at the start of this year i.e., 2020, has impacted all sectors (such as Auto, Pharmacy, Agriculture, food processing, Chemicals, Electronics, Solar Power, IT, Tourism and aviation, Shipping, Textiles, and education) to come to a halt on account of lockdowns

### **Prof K N Balasubramanya Murthy Chairman, BITES & VC, DSU**

imposed by the nations to ensure social / physical distancing. This pandemic became uncontrollable by infecting lakhs of people and killing thousands of people. Further, it has affected all the religious, cultural and socio-economic activities all over the world.

When all other sectors were thinking of finding a new way of functioning under the prevailing circumstances, IT and education sectors quickly switched over to online mode without skipping beat. While IT sector switched to online mode by allowing employees to work from home as a matter of choice, the education sector switched over to online mode of conducting classes as there was no alternative. Educational institutions that already had open, informal and collaborative learning environments switched to online far more easily. For others it was a difficult transition. Questions on efficacy of online classes continued through the last academic year.

**Here we make an effort / attempt to understand pros and cons of online education. Online education/learning is any education or learning that takes place over the Internet which is often referred to as “e-learning” or “digital Learning”.** Online learning is just one type of “distance learning” as it takes place from a distance. As quoted in several articles, online / digital learning is a powerful tool not only for a pandemic condition but also for a regular system to accrue tremendous results for all stakeholders; some of the advantages of online education are:

- The teachers and students can choose the class-timings as per their convenience without having to undertake the daily commute to the educational institutions. The learning can happen any time as students continue to have access to recorded material;
- Online platforms can enable interactions between teacher and students as well as among students for knowledge sharing and reinforce sustained learning. The platforms also can provide a convenient repository to store all material related to the class such as notes and assignments. Any announcements related to assessment and assessment activity itself can be done in a seamless manner with learning activity;
- Doing teaching-learning from home does not get disrupted due to vagaries of weather, it will allow teachers to take care of their family or dependent children by making use of the flexibility to design their work-schedules to achieve work-life balance from the confines of their home. Students get to spend more time with their families and extended families and friends without affecting their learning;

- Further, learning can be for more effective if parents and relatives choose to oversee that students make the most of online learning without falling prey to any distractions;
- For those with learning difficulties, sense of comfort, security and assurance of learning from home along with attendant flexibilities of online mode of education, can make it an unexpected boon;
- Online education can strengthen student-teacher bond, as it enables multi-modal interactions between students and teachers and among students themselves. A student may raise a question through a chat box, over a direct email or as a common question in the study group. This is particularly comforting for students who shudder having to ask a question in a large class-room and hence simply refrain;
- Online platforms can facilitate far greater interactions among students than physical class-rooms do. In a physical class-rooms, interactions tend to get restricted to small groups of brands. In online forums it can happen between any two students and common interest groups form and dissolve lot more easily keeping the learning environment vibrant. These interactions can then move to social sphere thus providing collateral benefits to students;
- Online mode of education makes basic digital literacy a given among all the students. They will be far more at ease to move into work environments where business processes are realized as digital processes. This now can happen irrespective of the discipline student studies. In a way online education equips one with important life skills as the world is becoming pervasively digital where purchasing vegetables to long distance travel to getting appointments happen over internet;
- Online mode of education shifts students to exploratory mode of learning where they leverage internet search engines to acquire in-depth understanding on any topic and then branch out to learn related topics and broad-base their learning. Learning how to learn is a more lasting skill than learning about anything in particular;
- Online mode of learning creates a level playing field between regular students, distance learners and working professionals who are learning to advance their skills and knowledge, Any investment made here pays for itself sooner than later;
- Online mode of education nudges students to own their learning and manage it themselves as to how to pace it. With assessment also moving to online, instead of being scheduled by an academic calendar of an educational institution, students learn how to create their own learning calendars and stick to it. This however will happen over time;
- In the history of mankind probably there was no such medium as internet which enabled learning about the finest arts of the world to the most unassuming populace. Learning is democratized away from elitism and snobbery as well as unconstrained by silos of specialties and boundaries between disciplines. Tyranny of geography is overcome by powerful collaboration platforms which make the experiential learning using virtual mode rival the physical mode with ease.

While online learning has numerous advantages, they also go with the following caveats:

- Certain topics and disciplines lend themselves naturally for online learning and while others not at all. Imagine learning to be a surgeon with no experience doing anything hands on. Thus, online can complement but not completely do away with physical learning. A day may come where majority of physical activities are done under the guidance of Robots and AI programs, but there will be others human ingenuity and skill are still needed;
- The onus on learning is with the learner to absorb more knowledge by repeatedly revisiting what was covered in the class and artifacts shared in the online platform. Past excuses of teachers being not in sync with students or them missing out on paying attention no longer remain valid. Thus, a good student may get benefitted immensely whereas one not studious may not benefit at all. Any tendency to procrastinate and defer the learning may make the matters far worse in online mode;
- Online mode of education requires enormous self-discipline to stick to the schedule and time management when there are multiple tasks competing for one's time; and
- At times, learning in online mode can be a lonely experience. Students miss out on the hustle and bustle of class-rooms and opportunities to socialize with their friends which are part of the larger campus experience. This can partly be compensated with the chatter on social platforms, but nothing can replace a physical class-room and a study experience being part of an actual college, with day to day classes and other activities.

**Prof K N Balasubramanya Murthy**

## **PROF R NATARAJAN'S COLUMN**



### **Institutes of Eminence**

The following discussion has utilized the information available on the internet.

"Institutions of Eminence scheme has been launched in order to implement the commitment of the Government to empower the Higher Educational Institutions and to help them become world class teaching and research institutions, as announced by the Hon'ble Finance Minister in his budget speech of 2016".

**Former Chairman, AICTE & BITES  
Former Director, IIT-Madras**

*Institutes of Eminence (IoE)* is a recognition scheme for higher education institutes in India, set by the University Grants Commission in 2017. The plan encompasses twenty institutions, 16 of which have already been declared Institutes of Eminence as of August 2019. Recognised institutes are granted more autonomy, both administratively (e.g. setting fees) and academically, and will enjoy better collaboration opportunities with global universities. Public institutions are granted up to ₹1,000 crore (equivalent to ₹12 billion or US\$160 million in 2019); no funding is awarded to private institutions.

The IoE scheme was first announced in the presentation of the 2016 Union budget of India on 29 February 2016 by the Finance Minister of India, Arun Jaitley. The purpose of the plan was stated as "... to empower Higher Educational Institutions to help them become world class teaching and research institutions". The plan would include twenty institutes, ten private and ten public. The UGC set the guidelines and regulations for IoE in 2017 and set up an Empowered Expert Committee (EEC), headed by **N Gopalaswami**, which was tasked with the selection of the institutes and later with monitoring them. The EEC considered 114 applications, 74 from public institutes and 40 from private ones, including institutes which are yet to be established. These institutes were ranked by the UGC based on QS World University Rankings, in which National Institutional Ranking Framework (NIRF) was used as a tie-breaker for private universities.

*Institute of National Importance (INI)* is a status that is conferred on a premier public higher education institution in India by an act of Parliament of India, an institution which "serves as a pivotal player in developing highly skilled personnel within the specified region of the country/state". Institutes of National Importance receive special recognition and funding from the Government of India. As of 2020, there are 156 institutes, declared as Institutes of National Importance under a distinct Act of Parliament. These INIs include 23 IITs; 15 AIIMSs; 20 IIMs; 31 NITs; 25 IIITs; 7 IISERs, 7 NIPERs; 5 NIDs; 3 SPAs; 5 central universities; 4 medical research institutes and 11 other specialized institutes.

#### The Objectives of the IoE Scheme are:

- **Excellence and Innovation:** To provide for higher education leading to excellence and innovations in such branches of knowledge as may be deemed fit at post-graduate, graduate and research degree levels.
- **Specialization:** To engage in areas of specialization to make distinctive contributions to the objectives of the university education system.
- **Global Rating:** To aim to be rated internationally for its teaching and research as a top hundred Institution in the world over time.
- **Quality teaching and Research:** To provide for high quality teaching and research and for the advancement of knowledge and its dissemination

#### The Criteria employed are:

- **Global/National Ranking:** Only those institutions which have appeared in any of the global/national ranks shall be recommended for the IoE status.
  - **Public institutions** are assessed on the basis of **QS-2020 world rankings**, in case of a tie **QS- 2019 rankings** are used.
  - **Private institutions** are assessed on the basis of their ranking in the **QS India or National Institution Ranking Framework (NIRF)**, the NIRF ranking being used as a tie-breaker.
  - Any institution that did not appear in any rankings (QS-2019, QS-2020 and NIRF) is excluded completely from the list of IOE tag.
- **Greenfield Proposals:** Only after exhausting the above criterion, if any slot remains vacant, consideration shall be given to **yet to be established (Greenfield)** proposals.
  - The term greenfield project generally refers to the initiation of a project without the need to consider any prior work.
  - The Greenfield Institutions would get **3-year period** to establish and operationalise the institution, and thereafter, EEC will consider giving IoE status to such institutions.
  - **Satya Bharti Foundation (telecom major Airtel's philanthropic arm)** became the **second greenfield institution** to be given IoE status, **after Reliance's Jio Institute**.

#### Benefits

- **Autonomy:** Institutes with IOE tag will be given greater autonomy and freedom to decide fees, course durations and governance structures.
- **Grant:** The public institutions under IOE tag will receive a government grant of ₹1,000 crore, while the private institutions will not get any funding under the scheme.

#### EXPECTATIONS FROM THE INSTITUTIONS OF EMINENCE:

(Reproduced from the internet)

"Notable features present in existing international institutions of global repute, which figure at the top in all reputed ranking frameworks, include the following:

1. Highly qualified faculty, with freedom to hire from across the world.
2. Existence of academic, administrative and financial autonomy.
3. Excellence in research.
4. High Quality of teaching.
5. High levels of funding.
6. Adequate financial assistance to meritorious students to support a need-blind admission process.
7. Selection of students through a transparent system so as to ensure intake of meritorious students.
8. A significant proportion of international students.
9. Autonomous governance structures.
10. Well-equipped facilities for teaching, research, administration, and student life.
11. Tangible and intangible contribution to the society; and
12. Ability to leverage alumni and alternative funding sources, and the autonomy to utilize these resources
13. It should preferably be multi-disciplinary or inter-disciplinary and have both teaching and research focus of an exceptionally high quality.
14. It should offer inter-disciplinary courses, including in areas of emerging technology and interest as well as those of relevance to the development concerns of countries like India and also award degrees, diplomas and other academic distinctions in such interdisciplinary areas.
15. It should have a good proportion of foreign or foreign qualified faculty.
16. There should be a reasonably good mix of Indian and foreign students.
17. There should be a transparent merit-based selection in admissions, so that the focus remains on getting meritorious students.
18. The admission process should be need-blind – so that once a student gets admission purely on merit, such a meritorious student should not be turned away for lack of financial ability.
19. The faculty student ratio should be not be less than 1:20 at the time of notification issued declaring an Institution as an Institution of Eminence and should increase over time so as not to be less than 1:10 after five years of this date. The faculty for this purpose includes the regular faculty, adjunct faculty, and long-term faculty (for at least three years). Part time faculty shall not be counted for the purpose.
20. There should be laboratory facilities to undertake cutting-edge scientific research for those Institutions of Eminence Deemed to be Universities doing scientific research. In case of humanities, social science and other interdisciplinary areas, the faculty should be engaged in research and field work in frontier areas using the latest methodologies.
21. The Institution of Eminence should strive to achieve social impact by engaging in applied research and innovation in issues of concern to developing societies.
22. The Institution of Eminence should develop teaching and research collaborations with a reasonable number of global universities figuring in the most reputed global rankings.
23. The Institution of Eminence should be known for promoting a culture where faculty are encouraged to publish regularly in peer-reviewed journals and engage academically with the issues of concern to the society. It should have a record of research publications at the mean rate of at least one per faculty member each year in reputed peer-reviewed international journals based on publication made by top 100 global Universities in these journals. For this purpose:
24. The Institution of Eminence should have a world-class library with subscriptions to reputed journals in the areas of courses it is offering.
25. The Institution of Eminence should have student amenities comparable with that of globally reputed institutions.”

## ELITE UNIVERSITIES IN DIFFERENT COUNTRIES

Wikipedia lists the following groups of elite universities in different countries.

- *Ivy League*, a formal grouping of elite private universities in the United States
- *Imperial Universities*, a grouping of elite older universities in Japan
- *Russell Group*, a formal grouping of advanced universities in the United Kingdom
- *Golden Triangle (English universities)*, a group of universities in Oxford, Cambridge, London
- *SKY (universities)*, a group of prestigious universities in South Korea
- *TU9*, alliance of nine leading Technical Universities in Germany
- *C9 League*, alliance of top universities in China

## CURRENT IOEs in INDIA

The UGC, in its 542nd meeting held on Aug 2, 2019 has considered the reports of the Empowered Expert Committee (EEC) appointed by Government under the chairmanship of N Gopalaswami recommending 15 public institutions and 15 private institutions for considering to give status of IoE.

Since the scheme has only provided for 10 public and 10 private institutions, the UGC is examining the list of 15 public and 15 private institutions using 'transparent and verifiable criteria', the education ministry said.

"Since the thrust of the scheme is to prepare institutions for the global rankings, no existing institution which has NOT figured in any of the global/national ranks shall be recommended for the IoE status," a statement from the ministry said.

Among these Bharti and Jio Institutes are 'Greenfield Institutions' which are according the ministry, "not there right now but where well-meaning, responsible private investment wants to bring global standards to the country" and these institutes would get a 3 year period to establish and operationalise the institution, and thereafter, EEC will consider giving IoE status to such institutions.

S No	Institution	World Rankings (QS 2020)	India Rankings (QS 2019)	Recommendation of UGC
1	IIT Bombay (INI)	152	1	Already Declared IoE
2	IIT Delhi (INI)	182	4	Already Declared IoE
3	IISC Bangalore (Deemed Univ.)	184	2	Already Declared IoE
4	IIT Madras (INI)	271	3	Recommended for declaring as IoE
5	IIT Kharagpur (INI)	281	5	Recommended for declaring as IoE
6	Delhi University (Central Univ.)	474	8	Recommended for declaring as IoE
7	University of Hyderabad, Hyderabad (Central Univ.)	601-650	7	Recommended for declaring as IoE
8	Jadavpur University, Kolkata (State Univ.)	651-700	12	Needs consultation with State Govt. prior to consideration
9	Anna University, Chennai (State Univ.)	751-800	13	Needs consultation with State Govt. prior to consideration
10	BHU, Varanasi (Central Univ.)	801-1000	15	Recommended for declaring as IoE
11	Savitribai Phule Pune University, Pune (State Univ.)	801-1000	19	
12	AMU, Aligarh (Central Univ.)	801-1000	33	
13	Tezpur University (Central Univ.)	Not ranked	36	
14	Panjab University, Chandigarh (State/Central Univ.)	Not ranked	49	
15	Andhra University, Vishakapatnam	Not ranked	46	

Source: <https://www.ndtv.com/education/institutions-of-eminence-ugc-releases-list-includes-iits-iisc-jio-institute-delhi-university-bits-pi-2079531>

S No	Institute	India Rankings (QS 2019)	India Rankings NIRF			UGC Recommendation
			2019	2018	2017	
1	BITS Pilani, Rajasthan	17	23	17		Already selected and given Letter of Intent
2	Manipal Academy of Higher Education	26	9	11		Already selected and given Letter of Intent
3	Jio Institute (Reliance Foundation, Maharashtra)	Green Field (yet to be established)				Already selected and given Letter of Intent
4	Amrita Vishwa Vidyapeetham, Bangalore	40	8		8	Recommended for issue of LoI
5	VIT Vellore, Tamil Nadu	44	19		16	Recommended

						for issue of Lol
6	Jamia Hamdard, New Delhi	51-55	18		23	Recommended for issue of Lol
7	Kalinga Instt. of Industrial Technology, Bhubaneswar	61-65	31		42	Recommended for issue of Lol
8	O.P. JINDAL University, Haryana	66-70	-		-	Recommended for issue of Lol
9	Shiv Nadar University, Uttar Pradesh	-	52		48	Recommended for issue of Lol
10	Bharti (Satya Bharti Foundation), Delhi	Greenfield (yet to be established)				Recommended for issue of Lol in the vacant slot
11	Azim Premji University, Bangalore	Not ranked, not considered				
12	Ashoka University, Sonapat, Haryana	Not ranked, not considered				
13	KREA University (IFMR), Chennai, Tamil Nadu	Not ranked, not considered				
14	IIHS (Indian Institute for Human Settlements), Bangalore	Not ranked, not considered				
15	Indian Institute of Public Health, Gandhinagar	Not ranked, not considered				

Source: <https://www.ndtv.com/education/institutions-of-eminence-ugc-releases-list-includes-iits-iisc-jio-institute-delhi-university-bits-pi-2079531>

**Prof R Natarajan**

## ABOUT OUR MEMBER INSTITUTION

### **Navkis College of Engineering, Hassan**



**Navkis College of Engineering, Hassan (NCEH)**, is run by Yagachi Education and Research Trust, (earlier in the style and name of N D R K Institute of Technology, Hassan) now under the patronage of **Ram's Education Foundation, Bengaluru** managed by the **family of Late Sri. M. S. Ramaiah**, a renowned Industrialist, Philanthropist, Visionary, and Educationist. The College is affiliated to Visvesvaraya Technological University, Belagavi.

**NCEH** is characterized by a management cognizant of and committed to education with a rich heritage and experience and qualified and motivated faculty members with select proficient seniors and is functioning under the outstanding leadership of **Sri M**

**R Anandaram** as chairman. He is ably assisted by **Dr. M. G. Venkateshmurthy** as the Director (Technical) who is in the field of Technical Education for the last five decades.

The vision of the college is - **To be an illustrious institution preparing globally accredited professionals with human values**

The college is located in the outskirts of Hassan City on the Bangalore-Mangalore highway (NH-75), in a serene picturesque landscape spread over 12 acres with good academic ambience comprising of all infrastructure and facilities necessary for quality engineering education.

**NCEH** conducts Bachelor of Engineering (B.E.) **Programmes** in:

- Civil Engineering
- Computer Science and Engineering
- Electronics and Communication Engineering
- Mechanical Engineering

**Salient features of the College are:**

- ❖ A stimulating learning environment
- ❖ Highly progressive management with well-defined goals
- ❖ Eminent Advisory Body
- ❖ Committed faculty guided by highly experienced leaders
- ❖ State-of-the-art Laboratories
- ❖ Rapport with many industries and institutions of higher learning.
- ❖ ICT driven Teaching-Learning Process
- ❖ Well-stocked Library and e-Learning facilities
- ❖ Good Internet facility with Wi-Fi Hot Spots all-round the campus
- ❖ Effective Training and Placement
- ❖ Well-furnished Hostels – separately for Boys and Girls, on the Campus
- ❖ Co-Curricular and Extra-Curricular activities for all-round development

NCEH associates with professional organizations such as IEEE, CSI, IETE, ISTE and **Student Chapters** are available for the students to learn beyond the curriculum. It is also actively participating in the programmes organized by esteemed organizations such as BITES. Every department publishes a biannual **News Letter**.

NCEH has an active **Research Centre**. Many faculty members are pursuing research and publish papers in reputed journals and conferences. Collaborative research with industries is being planned. Faculty Development programmes are conducted regularly. All faculty members participate in FDPs organized by other institutions and upgrade their knowledge. An incubation centre for promoting entrepreneurship is also on the anvil.

In addition to the **Curricular and Co-Curricular activities** NCEH also offers an encouraging environment for **Sports and Extra-curricular activities** so that the graduates will have an opportunity for all-round development.

NCEH is getting consistently **good results** in the VTU examinations. Reasonably **good placements** are happening and for improving it further, an **Industrial Advisory Board** with eminent professionals from industries has been formed to implement their suggestions. **Upswing Learning** software – an e-Learning platform developed by the sister concern has been adopted to supplement classroom teaching. Faculty members are periodically evaluated by an **Academic Advisory Board**.

As a promising engineering college in the rural area, NCEH looks forward to enrich its capacity for quality education and be in the list of eminent engineering institutions of the country in the next five years and realize its goal of **reaching the unreached** in all respects.

**TWO Distinguished Guest Lectures (DGL) by Prof. R. Natarajan,  
Former Director, IIT – Madras and Former Chairman, AICTE – New Delhi  
Hosted by: RV College of Engineering, Bengaluru**



**“Energy, Environment, Ecology and Sustainable Development”**

**Date: August 04, 2020**

**FIRST** lecture started with an introduction of the Prof R Natarajan by Dr. K. N. Subramanya, Principal, RV College of Engineering. He welcomed the audience consisting of members from the BITES Board, Faculty and Students of Dayanand Sagar University and RV College of Engineering.

Prof. Natarajan started his lecture by mentioning that the Engineering education has in the recent past undergone a major transformation across the world in highlighting Outcomes-based Education and is driven by corresponding Accreditation imperatives. The National Board of Accreditation Graduate Attribute # 7 on Environment and Sustainability prescribes the need to “understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development”. While the importance of Sustainability is gaining in importance, there is no generally accepted definition of the term. Those who support the concept disagree in its precise meaning; while those who do not support it, agree that it has no meaning at all! There is also no widely recognized way to measure it.

**“The Symbiotic and Synergistic Relation between Industry and University”**

**Date: August 05, 2020**

In the **SECOND** lecture, Prof. Natarajan described the symbiotic and synergistic relationship between Industry and University alongwith the needed engineering education paradigm – shifts. The lecture covered that it is increasingly being recognized and acknowledged that industry and university are co-producers of engineering capabilities. Industry has the responsibility to continuously adapt the existing engineer knowledge and skill profiles to new demands and requirements; in addition, Industry must generate those skills and abilities that cannot be taught and learned in the University, but are acquired solely through experience in real-life settings. Universities bear the responsibility of translating new knowledge and skill demands on engineers into re-designed engineering curricula, and of providing new generations of graduates with the competencies required in the XXI century. Successful relationship demands cooperation between Industry and University that extends beyond their traditional division of responsibilities, through joint or dual education programs and strategic partnerships, or through a stronger integration of initial and continuing education. There are so many intersections between the spheres of activity and a structured relationship between the two entities is not only desirable, but also essential. They need each other – the relationship is symbiotic. There is a lot to be gained through the relationship – it is synergistic. Industry-University interaction must be deemed a mainstream activity by both partners.

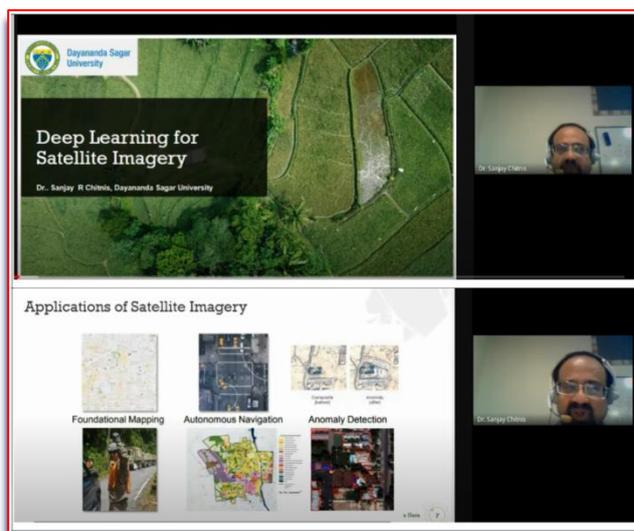
BITES received a good feedback of around 200 participants participating in these lectures from outside the state also. The 10 mins Q&A session was informative and interesting with Prof Natarajan addressing the issues and concerns raised by the faculty. Prof KNB Murthy, Chairman, BITES proposed the vote of thanks. Youtube links for the same will be provided in the website.

## Webinar on "Deep Learning for Satellite Imagery"

Date: August 06, 2020

Hosted by AJ Institute of Engineering and Technology, Mangaluru

Resource: Prof. Sanjay Chitnis, Professor of CSE, DSU



BITES organized a webinar on "Deep Learning for Satellite Imagery" by Prof. Sanjay Chitnis Professor of CSE at DSU on August 06, 2020 in association with AJ Institute of Engineering and Technology, Mangaluru. The lecture was delivered in virtual mode using Google Meet and about 74 participants attended the webinar.

This webinar is organized for the faculty, students and research scholars of various disciplines. Mr John Prakash Veigas welcomed the resource person Dr. Sanjay R Chitnis and the participants. Dr. Sanjay R Chitnis gave an introduction to the Satellite Imagery with its challenges and applications. Further he gave an insight to different types of deep learning networks viz Feed forward networks, Convolution Neural Networks, U-NET, Generative Adversarial Network and Custom architectures. He also provided information on datasets for the satellite imagery and code sources. A case study 'predicting the poverty using transfer learning and Wasserstein GAN' was discussed. Finally some of the Project ideas from ISRO were discussed.

Dr Nagesh H R, Vice Principal and Head of the department, Information Science and Engineering, AJIET proposed the vote of thanks to the resource person, participants and organizers. Participants appreciated the webinar. E-certificates are issued to the participants through mail.

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## Distinguished Guest Lecture on "Technology for Education in India: NEP 2020 Vision"

Date: August 8, 2020

Hosted by BNMIT, Bengaluru

Resource: Prof Viraj Kumar, Professor of CSE, DSU



BITES in association with BNM Institute of Technology has organized a Webinar on "Technology for Education in India: NEP 2020 India" on 8th August 2020 at 10:00am. The chief speaker for the webinar was Dr. Viraj Kumar, Visiting Professor at the Divecha Centre for Climate Change, IISc. Prof. KNB Murthy delivered the Welcome speech and introduced Dr. Viraj Kumar to the participants.

Dr. Viraj Kumar delivered a talk on NEP 2020. Sir explained the urgent need to eliminate the digital divide through concerted efforts and empower individuals with skills such as big data, machine

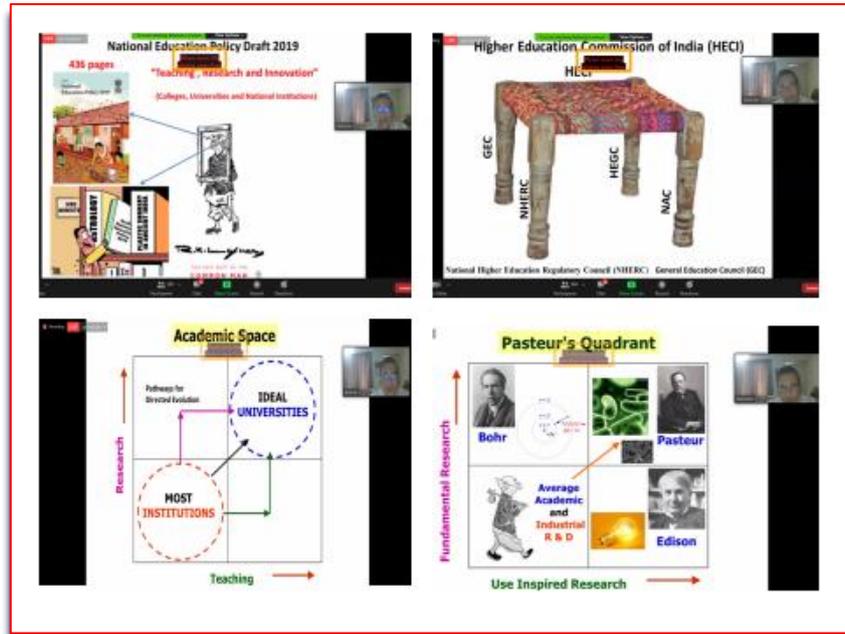
learning, and artificial intelligence, through online/digital learning. Sir also explained that the NEP aims to provide guidelines to make India a global knowledge superpower. The participants were excited to know this new scheme of education which stresses the Digital India Campaign that is helping to transform the entire nation into a digitally empowered society and knowledge economy. Dr..Viraj expressed that in our economy, education and technology will play a symbiotic role to improve existing educational processes and outcomes. There were approximately 80 active participants throughout the webinar. The webinar was well appreciated by participants and was a grand success.

## Distinguished Guest Lecture on “Implications of NEP 2020 for Higher Education and Research”

Date: August 27, 2020

Hosted by DSU, Bengaluru

Resource: Prof. P. Balam, Former Director, Indian Institute of Science, Bangalore



Dayananda Sagar Institutions in association with Board of IT education organised a webinar entitled “Implications of NEP-2020 for Higher Education and Research” on 27<sup>th</sup> August 2020 at 11.00 AM on Zoom platform, coordinated by Department of Chemistry.

The guest speaker was Prof. P. Balam, Former Director, Indian Institute of Science, Bangalore, Recipient of honour Padmabushana and R. Bruce Merrifield Award. The speaker presented varied responses, the National Education Policy (NEP) has been generating and progressive changes in the Indian education system.

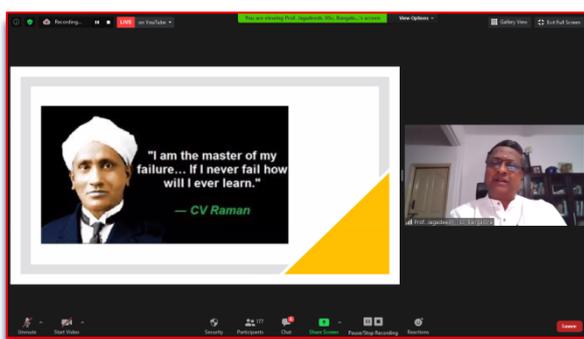
Prof. P. Balam, clearly explained the implications of the new policy on the functions of accreditation, academic standard setting and also the existing gap between scientific policies and a clear plan to implement these changes. The talk concluded with an interactive session with the participants where he emphasised the need for improvement in pedagogy and research enriching academic programmes. His inspirational words and insightful knowledge received an overwhelming response from over 600 participants and the event was also available live on YouTube.

## Distinguished Guest Lecture on “Gurubhyo Namaha”

Date: September 05, 2020 (Teachers Day)

Hosted by Dayananda Sagar College of Engineering, Bengaluru

Resource: Prof. G. Jagadeesh, Professor of Aerospace Engineering, IISc, Bengaluru



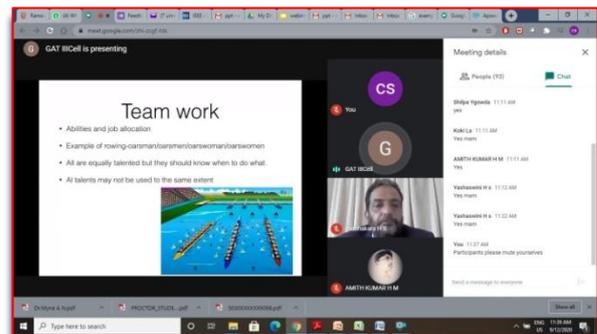
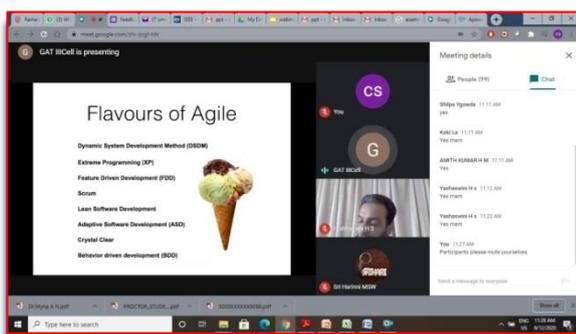
A Distinguished Guest Lecture (DGL) on “Gurubhyo Namaha” was organized on the occasion of Teacher’s day as a mark of tribute to the contribution made by teachers to the society on September 05, 2020 by Prof. Jagadeesh Gopalan, IISc Bengaluru. This program was organized to explain the significance and importance of the day for the benefit of faculty, students, education promoters and others. This lecture was delivered in virtual mode using Zoom platform on account of Covid-19 Pandemic and about 250 participants across various institutions attended the lecture.

After welcome and brief introduction of the speaker by Prof. CPC Prakash – Principal of DSCE, Professor Jagadeesh described the desired characteristics of a teacher by taking the examples of Dr. S. Radhakrishnan, Dr. Sir C.V.Raman, Dr. CNR Rao, and two of his own teachers at high school and pre- university. He narrated how these great personalities have significantly contributed for the development of the community, in particular, and society, in general. The participants expressed their satisfaction about the lecture that provided inspiration to them and Prof. Jagadeesh answered a few questions raised by the participants at the end of the lecture. The lecture was also made available via YouTube live.

The program was concluded by vote of thanks by Prof. KNB Murthy.

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**Webinar on "Agile Methodologies and DevOps Philosophy for Academic and Research Projects"**  
**Date: September 12, 2020**  
**Hosted by Navkis College of Engineering, Hassan**  
**Resource: Dr Geetha Prakash, Director, Industry-Institute Cell, GAT, Bengaluru**



The webinar started at exactly 11.00a.m on 12th September 2020. 100 registered participants from all over the country participated in this webinar through google meet link which was circulated through whatsapp, telegram and through e-mail.

Ms. Prathibha. G. delivered the welcome address. Dr. Myna A N introduced the speaker to the participants. Then Dr.Geetha Prakash took over. She first gave a brief introduction about Agile Methodologies and DevOps philosophy, currently being used in industry for software development and other projects. She then gave the formal definition of Agile. She further explained about different project execution methodologies in Agile. She later talked about the importance of agile methodologies. Then she discussed about the aspects of Agile and DevOps. She gave a list of companies which use Agile Methodologies and DevOps philosophy for executing their projects. Finally, she threw light on the various open problems for research in this domain.

The talk was followed by a question and answer session. Participants posed various questions and Dr. Geetha Prakash answered all the questions enthusiastically. Participants have given excellent feedback about the session. At the end of the session, Dr. H .S. Prabhakara, Principal, Navkis College of Engineering, spoke a few words about the session and also about continuing our collaboration with BITES for future endeavors. The webinar ended with a vote of thanks proposed by Mr. Abhinandan.

## Distinguished Guest Lecture on “Science-Engineering Conundrum”

Date: September 15, 2020 (Engineer’s day)

Hosted by Dayananda Sagar College of Engineering, Bengaluru

Resource: Prof. H. S. Jamadagni, Former Professor of Department of Electronics Systems Engineering (DESE), IISc, Bengaluru



BITES organized a Distinguished Guest Lecture (DGL) on “**Science-Engineering Conundrum**” by Prof. H.S.Jamadagni, Former Professor of DESE, IISc, Bengaluru on September 15, 2020 in association with Dayananda Sagar College of Engineering (DSCE), Bengaluru. The lecture was delivered in virtual mode using Zoom and was also made available via YouTube live.

Prof. KNB Murthy – Chairman of BITES welcomed Prof. Jamadagni and briefly introduced the speaker for the benefit of participants. While thanking BITES for the opportunity, Prof. Jamadagni started his lecture by narrating the views of Scientists and engineers in terms of their claims for superiority. He brought out a few case studies where engineering continued scientific concepts and vice versa. Then he provided good number of examples of existence of only Science and similarly, existence of only engineering. Finally he concluded that it is a futile exercise to debate on supremacy of science and engineering in stead, both need to co-exist for public good.

About 400 participants attended the lecture and asked a few questions which were answered by Prof. Jamadagni. Prof. KNB Murthy proposed the vote of thanks.

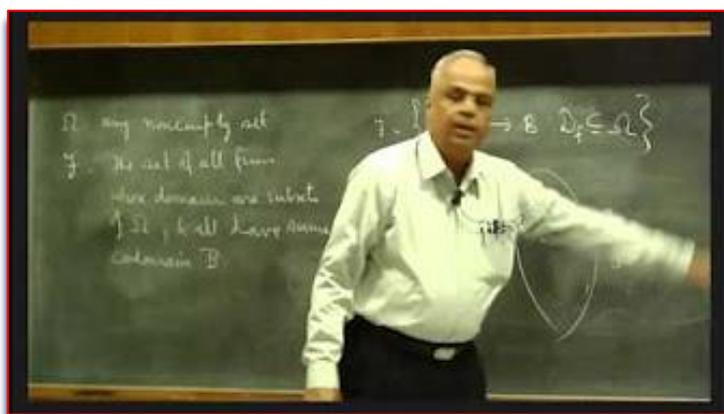
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## Ninth Celebrities and Celebrations (CAC) Lecture on “Joseph Fourier – The Analyst”

Date: September 22, 2020

Hosted by Dayananda Sagar University, Bengaluru

Resource: Prof R. Vittal Rao, Former Professor of Mathematics, IISc, Bengaluru



BITES organized ninth CAC lecture on “**Joseph Fourier – The Analyst**” by Prof.R. Vittal Rao, Former Professor of Mathematics, IISc, Bengaluru on September 22, 2020 in association with DayanandaSagarUniversity (DSU), Bengaluru. The lecture was delivered in virtual mode using Zoom and was also made available via YouTube live.

Prof. KNB Murthy – Chairman of BITES welcomed Prof. Vittal Rao and requested Prof. Jamadagni to briefly introduced the speaker as well as the concept of CAC for the benefit of participants. Prof. Jamadagni introduced Prof. Vittal Rao and informed the audience that CAC is mild concept to appreciate the contributions of legendary personalities for their investments in STEAM areas for the betterment of human kind. He also informed the participants that it is a short programme of about an hour, preferably, on the birth day of a celebrity that attempts to highlight the contributions of the celebrity and a brief account of the life of the celebrity.

Prof. Vittal Rao started his lecture by narrating brief life history of Joseph Fourier where in from his initial intention of becoming a priest, Jean Baptiste Joseph Fourier (1768-1830) donned several hats during his life - those of a mathematician, physicist, engineer, revolutionary, and a political associate of Napoleon - but remaining all along absorbed in mathematics. His legendary m'emoir, 'Th'eorieanalytique de la chaleur', (Analytic Theory of Heat), though marred initially by several controversies, triggered almost one hundred and fifty years of research in analysis reaching its crescendo in 1966 when L. Carleson proved the decisive convergence theorem for Fourier series (Carleson was awarded the prestigious Abel prize in 2006). He further mentioned that Fourier's ideas became a powerful tool in the hands of the engineers - the role of Fourier Analysis in Signal Processing being one of the most significant applications and the catalyst for the transformation of our world to a digital world. His ideas are typical of the unity and generality of mathematics and its influences are a great illustration of what the Nobel Laureate Eugene Wigner called, "Unreasonable effectiveness of mathematics".

Prof. Vittal Rao concluded his lecture by briefly reviewing the inspiring life and works of Fourier. About 227 participants attended the lecture and asked a few questions which were answered by Prof. Jamadagni. Prof. KNB Murthy proposed the vote of thanks.

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## **TWO Distinguished Guest Lectures on “National Educational Policy 2020”** **Resource: Prof R Natarajan, Former Chairman AICTE and Former Director IIT Madras** **Hosted by RVCE, Bengaluru**



### **FIRST LECTURE – “NEP - 2020 Highlights”** **Date: September 24, 2020**

BITES organized a Distinguished Guest Lecture (DGL) on “NEP - 2020 highlights” by Prof. R. Natarajan, Former Director, IIT – Madras and Former Chairman, AICTE – New Delhi on September 24, 2020 in association with RV College of Engineering (RVCE), Bengaluru. The lecture was delivered in virtual mode using Cisco WebEx and was also made available via YouTube live.

Prof. K. N. Subramanya – Principal of RVCE welcomed and briefly introduced the speaker. Prof. Natarajan started his lecture by mentioning the evolution of education policy in the country since independence by listing out the following:

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

He described the consultation process adopted by the Committee of NEP under Chairmanship of Dr. Kasturirangan to seek and incorporate the useful opinions of the stakeholders in NEP – 2020. He then narrated the following major reforms proposed in NEP – 2020:

- 50 % Gross Enrolment Ratio by 2035;
- Holistic and Multidisciplinary Education -Flexibility of Subjects;

- Multiple Entry / Exit;
- UG Program - 3 or 4 year;
- PG Program - 1 or 2 year;
- Integrated 5-year Bachelor's / Master's;
- M.Phil. to be discontinued;
- Credit Transfer and Academic Bank of Credits;
- HEIs: Research Intensive/Teaching Intensive Universities and Autonomous Degree Granting Colleges;
- Model Multidisciplinary Education and Research University (MERU) (in or near every District);
- Graded Autonomy :Academic, Administrative & Financial;
- Phasing out Affiliation System in 15 years;
- National Mission on Mentoring;
- Independent Board of Governors (BoG);
- Single Regulator for Higher Education (excluding Legal and Medical);
- On-line Self Disclosure based Transparent System for Approvals in place of 'Inspections';
- Common Norms for Public and Private HEIs;
- Private Philanthropic Partnership;
- Fee fixation within Broad Regulatory Framework;
- Public Investment in Education Sector to reach 6% of GDP at the earliest;
- National Research Foundation (NRF);
- Internationalisation of Education;
- Integration of Vocational, Teacher and Professional Education;
- Setting up of New Quality HEIs has been made Easier;
- Standalone HEIs and Professional Education Institutions will evolve into Multidisciplinary Institutions;
- Special Education Zone for Disadvantaged Regions;
- National Institute for Pali, Persian and Prakrit;
- National Educational Technology Forum (NETF);
- MHRD to be renamed as Ministry of Education;

Prof. Natarajan then touched upon the principles of the new policy as:

- The purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values;
- It aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our Constitution;
- A good educational institution is one:
  - in which every student feels welcomed and cared for,
  - where a safe and stimulating learning environment exists,
  - where a wide range of learning experiences are offered, and
  - where good physical infrastructure and appropriate resources conducive to learning are available to all students.
  - Attaining these qualities must be the goal of every educational institution.
- However, at the same time, there must also be seamless integration and coordination across institutions and across all stages of education.

He then explained the vision of NEP – 2020 as:

- Higher education plays an extremely important role in promoting human as well as societal well-being and in developing India as envisioned in its Constitution - a democratic, just, socially-conscious, cultured, and humane nation upholding liberty, equality, fraternity, and justice for all;
- Higher education significantly contributes towards sustainable livelihoods and economic development of the nation;
- As India moves towards becoming a knowledge economy and society, more and younger Indians are likely to aspire for higher education.

Prof. Natarajan pointed out some of the major problems currently faced by the higher education system in India include:

- a) a severely fragmented higher educational ecosystem;
- b) less emphasis on the development of cognitive skills and learning outcomes;
- c) a rigid separation of disciplines, with early specialization and streaming of students into narrow areas of study;
- d) limited access particularly in socio-economically disadvantaged areas, with few HEIs that teach in local languages; and
- e) limited teacher and institutional autonomy;

Prof. Natarajan concluded his lecture by mentioning a set of things to realize “what we have to do to create world class universities” in the country.

About 200 participants attended the lecture and posed a few questions which were well responded by Prof. Natarajan. Prof. KNB Murthy – Chairman of BITES proposed the vote of thanks.

## **SECOND LECTURE – “Expert Opinions on NEP-2020; and Contemporary Issues in Higher and Technical Education”**

**Date: September 25, 2020**

BITES organized a Distinguished Guest Lecture (DGL) on "**Expert Opinions on NEP-2020; and Contemporary Issues in Higher and Technical Education**" by Prof. R. Natarajan, Former Director, IIT – Madras and Former Chairman, AICTE – New Delhi on September 25, 2020 in association with RV College of Engineering (RVCE), Bengaluru. The lecture was delivered in virtual mode using Cisco WebEx and was also made available via YouTube live.

Prof. K. N. Subramanya – Principal of RVCE welcomed and briefly introduced the speaker. Prof. R. Natarajan started his lecture by stating the opinions of several experts such as

**Dr. Manjul Bhargava**, who took leave from his position at Princeton University to spend a year working on education policy in India, had mentioned that

- One thing missing in Indian education is [freedom] for teachers to innovate, to learn the latest, and to update their curriculum; and
- Often teachers are just given a book and [told to] teach page by page. Such autonomy is there in other countries ... for teachers to innovate, be creative, and learn the latest. Unfortunately, it is not there in the system in India, which requires cultural change;
- There is a need for more multidisciplinary education;
- Why are we putting people in silos in 8th, 9th grade? For their high school Board exams, students have to go for either the arts, the sciences, or commerce. In college, if they are doing engineering, they only do engineering;
- They don't have any stimulation on the other side of the brain. I think this is something that really must change to unleash the interdisciplinary creativity of the student; and
- Such a multidisciplinary education] actually was the ancient Indian tradition of "holistic education"—studying the sciences through the arts and the arts through the sciences. Breaking silos in education is going to be very important in the coming years;
- A multidisciplinary approach will help students to draw multiple perspectives while fostering plural thinking. Realising the importance of multidisciplinary approach, India's National Education Policy (NEP) 2020, under the leadership of Prime Minister Narendra Modi, intends to connect all the silos currently present and enable a conducive flow of thoughts, ideas and intellect across the various domains of knowledge;
- Students will be able to choose curricula, subjects and skill sets as per their 'choice' and 'interest'. To enable this, curriculum and pedagogy will be transformed including the introduction of subjects for the 21st century such as artificial intelligence, design thinking, holistic health, organic living, environmental education and global citizenship education at relevant stages.

**Dr. Gurcharan Das – I** (Author of India grows at night), has mentioned that

- One and a half cheers: National Education Policy promises much, but fails to come to grips with India's education crisis;
- If India wants to deliver quality education to its children, it needs an honest conversation on private schools;
- One of our myths is that education must only be delivered by the government if it is to serve the public good;
- Hence, private schools are tolerated based on:
  1. a hypocritical lie which forbids them from making a profit, when everyone knows that most, in fact, do; and
  2. that the state will shackle them in a license raj to ensure that they behave.
- The truth is that recent education reforms in the United States (US), the United Kingdom (UK), and even socialist Scandinavian countries have encouraged private initiatives.
- Many schools there are moving to a privately-run/publicly-funded model.

**Pankaj Jalote** (Director, IIT, Delhi) has commented that

The recently released New Education Policy (NEP) recommends:

- consolidation of higher education institutions (HEIs),
- creation of large multidisciplinary universities, and
- national research council to support research.

These can also help in improving the presence of Indian institutions in the global rankings. Currently there are no Indian universities in the top 200 in ARWU or THE rankings, and 3 in the QS rankings.

The NEP rightly has grouped the higher educational institutions (HEIs) in three categories – research universities, teaching universities, and colleges. These are the natural levels in a HE system and are the main ones in the oldest and most well-known framework for classifying HEIs – the Carnegie Classification.

Prof. R. Natarajan concluded his lecture by suggesting the Road Ahead as follows:

- The Destination is clear – globally competitive and academically reputed systems and processes.
- Roadmap – Several National Policies and Benchmarking with WCUs
- But the Road is strewn with many Impediments and Obstacles – Lack of Commitment, Delays, Policy Paralysis, Complacency, and many other usual suspects.
- In this Age of rapid Change, Speed is of essence; we must start acting now!

About 170 participants attended the lecture and posed a few questions which were well answered by Prof. Natarajan.

Prof. KNB Murthy – Chairman of BITES proposed the vote of thanks.

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***BITES is not responsible for the views expressed by the contributors***