

Programme

- 1530-1540 hrs. **Welcome and Introduction** : Professor N. V. Varghese
Vice-Chancellor, NIEPA
- 1540-1640 hrs. **Foundation Day Lecture** : Dr. K. Kasturirangan, *Padma Vibhushan*
Chairperson, National Education
Policy 2020 Drafting Committee

Liberal Education – A 21st Century Imperative

- 1640-1650 hrs. **Address by the Chair** : Professor D. P. Singh
Chairman, University Grants Commission
New Delhi
- 1650-1700 hrs. **Vote of Thanks** : Dr. Manisha Priyam
Professor, NIEPA

कार्यक्रम

- 1530-1540 बजे **स्वागत एवं परिचय** : प्रोफेसर एन. वी. वर्गीज
कुलपति, नीपा
- 1540-1640 बजे **स्थापना दिवस व्याख्यान** : डॉ. के. कस्तूरीरंगन, पद्म विभूषण
अध्यक्ष, राष्ट्रीय शिक्षा नीति 2020
प्रारूप समिति

उदारवादी शिक्षा - 21वीं सदी की अनिवार्यता (लिबरल एजुकेशन - ए ट्वेन्टी फर्स्ट सेन्चुरी इम्पेरेटिव)

- 1640-1650 बजे **अध्यक्षीय संबोधन** : प्रोफेसर डी. पी. सिंह
अध्यक्ष,
विश्वविद्यालय अनुदान आयोग, नई दिल्ली
- 1650-1700 बजे **धन्यवाद प्रस्ताव** : डा. मनीषा प्रियम
प्रोफेसर, नीपा

Note: Kindly join us for Tea at 1700 hours.

नोट: कृपया जलपान के लिए 1700 बजे पधारें।



राष्ट्रीय शैक्षिक योजना एवं प्रशासन संस्थान के
कुलपति
एवं

संकाय सदस्य तथा स्टाफ

पंद्रहवें स्थापना दिवस समारोह के अवसर पर

डॉ. के. कस्तूरीरंगन, पद्म विभूषण

अध्यक्ष, राष्ट्रीय शिक्षा नीति 2020 प्रारूप समिति
द्वारा

उदारवादी शिक्षा - 21वीं सदी की अनिवार्यता
(लिबरल एजुकेशन - ए ट्वेन्टी फर्स्ट सेन्चुरी इम्पेरेटिव)

विषय पर

स्थापना दिवस व्याख्यान में

आपको सादर आमंत्रित करते हैं।

प्रोफेसर डी. पी. सिंह

अध्यक्ष, विश्वविद्यालय अनुदान आयोग, नई दिल्ली
समारोह की अध्यक्षता करेंगे।

दिनांक : बुधवार, 11 अगस्त 2021

समय : 1530 बजे

कृपया नीचे दिये गए ऑनलाइन के माध्यम से हमसे जुड़ें

<https://meet.google.com/dyc-vgnm-uyq>

<https://www.youtube.com/watch?v=9kB-RnAoKIU>

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उत्तरापेक्षी

दूरभाष 26515472, 26853038
26544818, 26544833

(कार्यक्रम पिछले पृष्ठ पर)



Vice-Chancellor

and

Members of the Faculty and Staff

of the

National Institute of Educational Planning and Administration

solicit your esteemed presence
on the occasion of the

Fifteenth Foundation Day Function

Dr. K. Kasturirangan, Padma Vibhushan

Chairperson, National Education Policy 2020, Drafting Committee

will deliver the

Foundation Day Lecture

on

Liberal Education – A 21st Century Imperative

Professor D. P. Singh

Chairman, University Grants Commission, New Delhi

will be in the chair.

Date : Wednesday, August 11, 2021

Time : 1530 hrs.

Please Join us through online links as below:

<https://meet.google.com/dyc-vgnm-uyq>

<https://www.youtube.com/watch?v=9kB-RnAoKIU>

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RSVP

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(Programme Overleaf)

National Institute of Educational Planning and Administration
New Delhi

Fifteenth Foundation Day Lecture

Liberal Education – A 21st Century Imperative

by

Dr. K. Kasturirangan, *Padma Vibhushan*

Chairperson, National Education Policy 2020 Drafting Committee



August 11, 2021

National Institute of Educational Planning and Administration

The National Institute of Educational Planning and Administration is the premier national institution engaged in all aspects of educational policy, planning, and administration. Originally established in 1962 as the Asian Centre for Educational Planners and Administrators, it is today conferred with the status of a university, and is fully funded by the Ministry of Human Resource Development, Government of India. Over the last several decades, through its research, teaching, and capacity building activities with educational administrators at national, state, district, and sub-district levels, the organization has rightfully earned the status of being the apex national institution steering educational policy - planning as also in guiding on the ground change processes.

As a university, the NIEPA today has a multi-disciplinary faculty, and their scholarship contributes to broadening of the inter-disciplinary social science perspective, specially with respect to education. The NIEPA offers Post Graduate Diploma, M.Phil, and Doctoral programmes in educational policy and development. The institution hosts leading scholars of education globally, as also visiting delegations of educational administrators from the developing world, including an in-residence diploma programme for educational administrators.

Liberal Education: A 21st Century Imperative

Dr. K. Kasturirangan

Former Chairman, ISRO

Former Chairman, NEP Committee

Fifteenth Foundation Day Lecture, 2021

(Delivered Online)



**National Institute of
Educational Planning and Administration**

August 11, 2021

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(Deemed to be University)

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Liberal Education: A 21st Century Imperative

K. Kasturirangan*

Viraj Kumar**

At the outset, let me greet the entire community of National Institute of Educational Planning and Administration (NIEPA) on the august occasion of its Foundation Day. I would like to express my grateful thanks to Prof. N.V. Varghese, Vice-Chancellor, NIEPA and Prof. K. Ramachandran, eminent educationist, NIEPA for this honour done to me, in inviting me to deliver the 15th Foundation Day lecture of NIEPA.

Nearly six decades into its existence, NIEPA has undergone several phases of transformation with its origins as a UNESCO regional centre facilitating the training of educational planners and administrators in the Asian region. Recognizing its effectiveness as a centre for creating human resource for educational planning and administration for India and for

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the Asian region, NIEPA further evolved itself towards becoming what is now a full-fledged University. It is one of the few institutions in the region that imparts study programs at the doctoral level, organizes capacity development programmes for educational planners, as well as, extends policy support for decision making in the area of education. Quality and excellence are the hallmarks of this institution in delivering its unique objectives.

It is my pleasure to recall that one of the earliest meetings of the Committee for National Education Policy 2020 was organized by NIEPA, when the Committee Members got a comprehensive picture of India's educational system and status encompassing different facets of education through interaction with many of the distinguished educationists of NIEPA; some of the best that this country has. Subsequently, the NEP Committee often consulted members of NIEPA's Academic community on specific issues on one side and co-opting Prof. Ramachandran as one of the key members of the team charged with drafting India's new education policy, NEP 2020. I won't be exaggerating if I point out that Prof. Ramachandran besides his vast knowledge and deep erudition of the different aspects of education, also served as a walking encyclopaedia on the subject of education. Therefore, on this special occasion of Foundation Day, I would like

to pay my warm tributes to the dynamic Vice-Chancellor Prof. Varghese and all his colleagues for their crucial role in formulating NEP 2020. I am also happy to note that more recently, the University has prepared implementation strategies for NEP 2020, which I am sure will have an influential impact on the way we translate this policy into ground level actions.

The goal of this talk is to examine the concept of *liberal education*, also designated as “holistic and multidisciplinary education” in NEP 2020. Liberal education represents a substantial shift in the paradigm of our present higher education system, particularly at the undergraduate level. We will argue why such a paradigm shift is an imperative for India in this century.

The Committee’s mandate was to develop an education policy that would be relevant for at least 20 years. In any forward-looking endeavour, it is often helpful to first examine our past and reflect on how we have reached our present position. We will therefore begin by tracing the broad evolutionary contours of the idea of liberal education, particularly in India.

The key characteristic of liberal education – one that has remained unchanged throughout its evolution – is a recognition of the holistic and

fundamentally interconnected nature of all human knowledge and enquiry. While commenting on the unity of religions, arts, and sciences, Albert Einstein evoked the metaphor of “branches of the same tree”. This metaphor suggests a unified “trunk”, but it also evokes a mental picture where the branches of knowledge split off and grow further apart from each other. The concept of “liberal arts” explicitly rejects such a notion and embraces the unity of these “branches”.

In India, education at Takshashila and Nalanda possessed this liberal characteristic, but the idea is likely to predate these great monastic universities. Banabhatta’s *Kadambari*, contemporaneous with the early phase of Nalanda some 1400 years ago, describes a truly educated person as one who had mastered several *kalas* or arts, which included music, dance, painting, sculpture, languages, and literature, in addition to subjects such as engineering and mathematics, as well as vocational subjects such as carpentry. The precise *kalas* have clearly evolved and expanded over time, and individuals at the forefront of this expansion were adept at crossing what we would today regard as disciplinary boundaries. Aryabhata I, for instance, discovered truths in mathematics and in astronomy, and was part of a scholarly lineage that established a strong tradition of systematized but objective knowledge of the world that we call science.

Thus far, a truly broad-based, liberal education has been accessible primarily to elite members of society. Such a system provides youngsters with an opportunity to savour the breadth of human knowledge, to explore their own interests, and to delve deeply into far-reaching questions that all humans are endlessly fascinated by, such as: “What is life?”, or “What is the nature of the Universe?” Such questions were largely the purview of religious thought. It is therefore unsurprising that many of the educational systems that seriously grappled with such questions originated as monasteries, as we have already noted was the case with Nalanda and Takshashila.

For the vast majority of people, however, education has had an overtly utilitarian nature and has been limited to specific silos. Historically, such an education has commonly taken the form of apprenticeship to acquire a fairly narrow skill-set. Such a system of education is scalable, and throughout history, it has produced “job-ready graduates” for the jobs of the day. Some of these graduates no doubt became highly skilled craftsmen who advanced not only their art, but also the technology associated with their art.

Metallurgy provides an excellent example. Starting from the first documented use of iron in India (about 1300 BCE), technological advances led to remarkable achievements such as the rust-

less iron pillar in Delhi's Qutab Minar complex (which dates to the early 5th century CE), and the pioneering development of wootz steel in Tamil Nadu, which represented a significant advance in the art and technology of sword-making. Even until the second half of the 18th century, certain products of Indian technology were superior to their European counterparts. A famous example is military rockets, deployed effectively by Tipu Sultan against the British forces.

The late Prof. Roddam Narasimha has noted that by this stage in India, knowledge of science and knowledge of technology often resided in two different communities, with weak interactions between them. This is evidenced by the scarcity of scientific literature in metallurgy and several other domains where Indian technology was outstanding. Narasimha observes that although the Indian rockets were very well-made, "they were not standardized, being rather the creation of artisans who had a long tradition of working with well-understood materials and techniques". Thus, despite continuous improvements in technology, "rocket manufacture never went beyond being a craft" within a siloed community, and there was no opportunity for someone from the scientific community to "analyse rocket performance using mathematics that had been so imaginatively developed in the country for astronomical applications".

In Europe, a similar scientific tradition of systematized and objective knowledge had been established, with a pronounced emphasis on predicting natural phenomena in terms of the fewest possible principles or hypotheses. In this approach, scholars deliberately focused their systematic study on narrow, seemingly mundane questions such as “How does water flow in a tube”, or “Why does an apple fall to earth?” In the words of the physicist Victor Weisskopf, this approach led to “the great miracle” because it yielded surprisingly powerful yet fundamental insights into the basic structure of nature. There was absolutely no reason to expect that the answers to limited questions would generalize so dramatically – that the study of falling apples would lead to a theory of celestial mechanics and an understanding of the gravitational law, or that the theory that explains the Brownian motion of dust particles suspended in liquid would also explain the motion of stars in the Pleiades cluster over 400 light years away.

The non-holistic, reductionist approach that lay at the heart of this brand of science was leading to a seemingly-holistic understanding of the world around us, albeit within a framework of emerging disciplines. Each discipline established its own way of making sense of the world and discovering further truths. In Europe, where there were comparatively fewer barriers between the scientific

and technological communities, these insights were applied to rapidly advance technologies – often initially for military purposes. Thus, a book published by a newspaper correspondent embedded with the British troops in South India triggered a vigorous research and development programme that culminated in Congreve’s more advanced, mass-produced rockets.

Similar advances across the technological spectrum completely reshaped human society and ushered in the Industrial Age. In its wake, and right through most of the previous century, there has been a strong demand for education leading to “depth” in a specific discipline, and most institutions have heeded to this demand. The few institutions that offer a liberal approach, favouring “breadth” across a range of disciplines, have tended to be expensive institutions that remain inaccessible to most members of society.

To their immense credit, several prominent educationists in India and elsewhere recognised not only the inherent inequity of such trends, but also the perils of such an approach to the broader pursuit of knowledge. Two prominent examples of efforts to swim against these prevailing currents are the establishing of units for Humanities and Social Science at IITs from their very foundations, and the Kothari Commission Report. The latter, written in 1964, presciently states that “some study

of science should become a part of all courses in the humanities and social sciences at the university stage, even as the teaching of science can be enriched by the inclusion of some elements of the humanities and social sciences”.

Thus, it is clear from this glance backwards in time that support for the idea of liberal education in India has waxed and waned. While drafting NEP 2020, the Committee had to reflect carefully on the importance of this idea going forward. There are three main reasons why the Committee firmly endorsed the need for liberal education in 21st century India.

First, as stated in the Draft Policy, the purpose and importance of a liberal arts education, especially today, is to “enable students to explore the numerous remarkable intertwined relationships that exist among the sciences and the humanities, mathematics and art, medicine and physics, etc. – and more generally, to explore the surprising unity of all fields of human endeavour”. A broad-based exposure to multiple disciplinary ways of thinking is a joy in and of itself for any learner, particularly for youngsters, perhaps because it is strongly associated with holistic mental development. A liberal arts education enables the learner to truly develop both sides of their brain – the creative/artistic side and the analytic side. No education

system should deprive young learners of this joy or this opportunity to develop holistically.

Apart from being a joy, it is increasingly clear that the 21st century will demand greater flexibility in ways of thinking, and this can only come through greater exposure to diverse ways of thinking. Steve Jobs famously remarked that the Macintosh would never have happened without the calligraphy class he took in college. Obviously, Jobs was not referring to the specifics of that one calligraphy class, but to how it sensitized him more broadly to aesthetics, and still more broadly to the power of multiple perspectives.

The second reason is superbly articulated in Yash Pal's *Report of "The Committee to Advise on Renovation and Rejuvenation of Higher Education"* (2009):

We have overlooked that new knowledge and new insights have often originated at the boundaries of disciplines ... Most instrumentalities of our education harm the potential of [the] human mind for creating and constructing new knowledge ... [O]ne could almost say that most serious problems of the world today arise from the fact that we are dominated by striations of expertise with deep chasms in between.

One could argue that these “chasms” are sometimes bridgeable. Indeed, the hallmark of any successful multidisciplinary effort is a framework in which experts can largely work within their well-defined silos, while facilitating engagement with experts from other disciplines at specific points in the overall process. This is manageable as long as all disciplines agree on a common structure imposed by the problem and, perhaps, certain constraints on the solution. This agreed-upon structure is sometimes called an interface. In software development, for example, the team may spend considerable time jointly designing the interface (more precisely, an Application Programming Interface or API). Once the interface has been properly designed, the team can split up and work within their silos – the interface is explicitly meant to minimize (and ideally eliminate) the need for members to communicate further across disciplines.

At ISRO, for example, we follow such a multidisciplinary model while coordinating our overall efforts across multiple work centres. Each work centre has a mandate to develop exclusive technologies and processes, bringing the related outcomes together, leading to an integrated product like a rocket or satellite. A more dramatic testament to the power of a well-structured multidisciplinary effort is the speed with which effective COVID-19 vaccines have been

developed, outstripping the timelines predicted by the WHO.

However, such an approach does not work for all problems. Indeed, Prof. Yash Pal's words of wisdom are alerting us to the fact that disciplinary and even multidisciplinary approaches alone cannot satisfy our thirst for knowledge in the 21st century. This is because increasingly we are grappling with problems that are too broad or complex to be adequately tackled within a single discipline, or problems that cannot be "broken up" and handed to experts from several disciplines. In such cases, there is no clean separation of concerns via interfaces, and team members must communicate regularly across disciplines as they work jointly from their disciplinary perspectives. This is often called an interdisciplinary approach. As just one example among many, consider the interdisciplinary programme in Educational Technology at IIT Bombay. In contrast to a multidisciplinary approach, the team of masters and Ph.D. students and their faculty must integrate educational concepts, theories, and methods with a range of technologies to develop technology-enhanced learning environments, to solve complex problems related to improving pedagogy for technology enhanced learning, and to leverage technology to facilitate discipline-based education research.

There are still other types of problems where even an interdisciplinary approach is insufficient. Instead, the team must adopt a transdisciplinary approach that not only integrates several discipline-specific approaches, but also extends these approaches to generate fundamentally new conceptual frameworks, hypotheses, theories, models, and methodological applications that transcend their disciplinary origins. Such an approach is particularly relevant when problems span across arts and humanities on the one hand and science and technology on the other. This approach is increasingly necessary in cutting-edge research, and it can lead to the emergence of new sub-disciplines (or even whole new disciplines).

As an example, consider landscape archaeology. Whereas traditional archaeology focuses on studying small-scale remnants of the past, ranging from fragments of pottery to individual structures or at most a cluster of structures, landscape archaeology expands the realm of study to include surrounding landscapes. These landscapes can hold hitherto undiscovered clues to the past that are detectable using remote-sensing technologies. Transdisciplinary research in this context has led to the development of new techniques to analyse remote sensing data after integrating it with other historical data drawn from old maps using GIS technologies. Interestingly, this transdisciplinary approach has led to new

insights into the history of one of the iconic transdisciplinary institutions of the past, namely Nalanda. By measuring the precise orientation of the sacred structures using satellite imagery, researchers have discovered that structures that were built later are tilted further away from the east-west line than earlier structures. To explain this, the researchers weave together insights from history and astronomy. In doing so, they have arrived at a surprising technique to date these structures. This, in turn, has advanced our knowledge because these sacred structures are difficult to date using traditional techniques.

Prof. Yash Pal is obviously not suggesting that the goal of school and undergraduate education is to train young minds to solve problems that challenge professionals. Instead, we recognize that there are key elements of the process that professionals follow which young students can (and must) be exposed to. It is challenging to achieve this without blurring rigid “subject boundaries”. Perhaps such a view is surprising or even nonsensical to many of us with a strong discipline-specific education, but it is endorsed by erudite academicians in India and all over the world. To quote one such academic, Saikat Majumdar, who is a Professor at Ashoka University and formerly taught at Stanford:

There is really no such thing as a Liberal Arts subject. Any subject can be taught as one, as long as it is not being used as professional training for a particular kind of career. So, Economics is a Liberal Art while Accountancy is not; Biology is a Liberal Art while Medicine is not; English is a Liberal Art while Journalism is not. A Liberal Arts education, however, is a very distinctive thing: it is an engagement with one (or more) of these fundamental disciplines in combination with a broad exposure to multiple disciplinary ways of thinking. If single-subject based education produces the I-shaped student, a Liberal Arts education produces the T-shaped student. The 'I' stands for depth in one subject, while the 'T' combines depth with range.

Employers are generally far more interested in T-shaped rather than I-shaped graduates. They are fully aware that well-rounded individuals with a holistic education are better prepared to tackle complex problems while also understanding the needs, desires, and motivations of co-workers, clients, and the wider society. A liberal education seeks precisely these outcomes – strong written and oral communication skills, teamwork skills, ethical decision making, critical thinking, and the ability to apply knowledge in real world settings.

The Committee's third reason takes into account the potential for significant and rapid transformations to the world of work, and consequent shocks to the wider social fabric, caused by advances in disruptive technologies. Today, we can easily identify specific forms of livelihood that are threatened by the AI revolution. What is quite remarkable is that such a threat was recognized more than five decades ago by Dr. Vikram Sarabhai in his 1968 Convocation Address at IIT Madras:

In nature, left to itself, control is maintained through an ecological balance. Order is not imposed from above, but arises through the interaction of each unit with its environment in a dynamic equilibrium. On the other hand, inherent in a programme of accelerated development, there is a suppression of some of the natural constraints which prevent divergence. And as the rate of innovation, of discovery and of everything else in the world gets faster and faster, so does the obsolescence of people and things become ever more acute ... The qualitative change which has occurred in the last decade with the development of atomic energy, with the exploration and use of space, with the advent of electronics and computer sciences, is a manifestation of the divergent human function which has suddenly

overtaken the world. What we have witnessed so far, dramatic as it is, is probably pedestrian compared to what we can expect in the future.

The Committee therefore had to seriously address the following question: How is our education system going to prevent the “obsolescence of people”? Failing to do so could, in the deliberately thought-and-action provoking words of the historian Yuval Noah Harari, lead to the rise of a “useless class”. This is a sobering thought, bearing in mind that our present education system fails to universally provide even foundational literacy and numeracy. Even when it does provide these necessary foundations, it does not prepare graduates for an uncertain world buffeted by pandemics, climate change, and AI. Knowing that every graduate entering the job market today will look forward not only to several jobs, but also several careers during their working life, the need for a wider T-shaped range of skills is evident. A liberal education has the potential to provide graduates with a combination of transferable and uniquely human skills, to help them adapt and continuously learn to work in this challenging environment.

Having discussed the question of “Why liberal education?”, let us turn our focus to

the more pressing question: “How can we implement liberal education at scale in India?” Designing liberal education programmes is obviously not a simple matter of offering a set of unrelated courses, or even courses where some lectures examine a central theme from the perspective of one discipline and other lectures examine the same theme from the perspectives of other disciplines. Bearing in mind the history discussed earlier, we have several excellent previously-tried approaches to liberal education that we can examine and learn from. Before discussing these, let us first articulate some key discipline-agnostic elements that seem absolutely necessary.

The first key element is fostering the ability to communicate clearly. Graduates are increasingly tasked with solving broad, complex problems in teams, where each member brings certain expertise to the table. Each of these members must be able to communicate effectively not only with experts within their own discipline (using a rich and shared discipline-specific vocabulary), but with others on the team who do not possess this vocabulary. Language fluency is obviously an important sub-element, but so too are critical and analytic reasoning, partly because these skills can help individuals rapidly expand an initially narrow shared vocabulary and thereby communicate more effectively. Effective

communication between humans goes well beyond vocabulary, of course. It includes an understanding of diverse cultures, perceptiveness, and sensitivity to different perspectives. Thus, these are also key elements. Naturally, cooperation and collaboration are also key elements for effective teamwork.

Let us now discuss two approaches that lie on the pathway towards liberal education and have an established pedigree in India: the practice of *integrated education* in the IITs, and the principles of management education as practiced in the IIMs. It is worth pointing out that both these types of institutions enjoy far greater resources and regulatory advantages than the vast majority of our higher education institutions. Several policies of NEP 2020 seek to level the playing field in the latter category. The lack of resources will always be a challenge, and it will be necessary to find creative ways to maximize the resources that can be brought to bear to implement the approaches that we will discuss next.

In *Breaking the Silo: Integrated Science Education in India*, Anup Dhar, Tejaswini Niranjana, and K. Sridhar propose two models to ensure the necessary degree of integration for going beyond multidisciplinary: the “soft integration model” and the “strong integration model”. We will expand on the core ideas of

these two models. The “soft integration model” is an evolution of the traditional disciplinary-based structure that most institutions follow today, where students typically “major” in one discipline but are free to choose additional courses in other disciplines (possibly leading to a “minor”). The crucial difference is that a certain proportion of the curriculum – at the course-level or at the programme-level – must be reserved for “dialogue” between multiple disciplines and their respective methodologies. In the spirit of a true dialogue, the purpose must not be to overtly challenge multiple viewpoints and choose a “correct” one, but to help students recognise the promise and the value in considering more than one viewpoint. These dialogues must include experts from each represented domain, and they can take several familiar forms – classroom discussions, seminars, workshops, etc. – but these cannot be isolated events. While this model is “pedagogy heavy”, it can be complemented with interdisciplinary projects of similar complexity to traditional projects at the undergraduate level.

In contrast, the “strong integration model” is a substantial departure from the traditional disciplinary-based programme structure. Instead, programmes are defined by critical but sufficiently broad problem areas such as clean energy, or adult literacy, or heritage preservation. The fidelity

is to the problem, not to one or a handful of disciplines. Indeed, relevant elements from any discipline that can help to understand and address the problem are fair game for inclusion in such programmes. Thus, a clean energy programme will probably include core courses in physics, renewable energy technologies, energy economics, as well as a host of electives that could be attuned to specific research and consultancy projects that the institution has strength in. Throughout, the search is for a solution, or a “better” solution according to a relevant metric, recognising that breakthroughs will often be interdisciplinary or transdisciplinary in nature. In contrast to the “pedagogy heavy” soft integration model, the strong integration model will tend to be more “research/consultancy heavy”.

Let us now explore the second approach to liberal education, as practiced by the IIMs and other top management institutions. In many respects, a liberal approach is almost forced in this context. Business problems tend to be highly complex, where the boundaries between causes and effects are blurred, there are multiple positive and negative feedback loops, and it is generally very difficult to separate out the essential elements of “the problem” from the noise in the system. Solutions to such problems are rarely optimal in a quantifiable sense, and they must combine *explicit knowledge* of the basic disciplines with *tacit*

knowledge that comes from practice. Specific pedagogical approaches, particularly the case method, have been developed and refined to facilitate learning. In the case method, students must learn to draw inferences from common patterns that they observe from a cross section of real-life illustrations of best practices. Of course, these “pattern recognition” or “synthesis” skills must be coupled with the harder more quantitative understanding of the core disciplines of management such as statistics, finance, and economics, as well as domain-specific knowledge. In fact, a key trend confronting MBA programmes today is the demand for graduates who are ready to work from day one in domain specific jobs.

The Policy rejects a “one size fits all” approach by recognising the importance of institutional autonomy. It does not even compel institutions to immediately develop and implement a liberal arts model. Indeed, it is clear that among the vast majority of institutions that are presently operating within a discipline-specific framework, a substantial number lack the resources to develop a suitable liberal education model *de novo*. It therefore falls to institutions like NIEPA to put together baseline models that could be feasible for such institutions to implement, and then refine over time as per their specific institutional development plans. In the absence of suitable reference models, some institutions may pay

mere lip-service to the idea of liberal education, or may develop flawed implementations based on a misunderstanding of the principles we have tried to articulate here. By making this presentation to NIEPA, we hope to exhort this august institution to develop a range of baseline models for liberal education, keeping in mind the broad spectrum of higher education institutions.

Such baseline models must include an aspect that NEP 2020 does not explicitly detail, but one that is extremely important: the need to train faculty for liberal education. An immediate challenge is the shortage of master faculty with sufficient expertise to adequately train other faculty. A greater concern is a substantial shift that is necessary in the present academic culture where interactions between faculty, between students and faculty, and between students is generally poor. It is immediately clear that both the “soft” and “strong” integration models discussed earlier are unworkable in such an environment. We must recognize that changing this culture is likely to require conscious and sustained effort, because it has deep historical roots. In fact, some scholars have argued that the etymology of the Sanskrit term उपनिषद्, which is उप- (near to) + नि (down) + सद् (to sit), reflects a prevailing atmosphere where the transmission of knowledge was restricted to only those in physical proximity, but otherwise shrouded in secrecy. Such an atmosphere is

explicitly encouraged in रसरत्नसमुच्चय, a compilation from the 13th, 14th, or 16th century which states that “This chemical knowledge is powerful when secret, impotent when public; so guard it with determination, as you would the privacy of your mother.”

NIEPA will play a critical role in ensuring that the key recommendations of this policy are successfully implemented. We are confident that these recommendations enjoy broad and enthusiastic support. We derive this confidence not only from the extensive consultations that our Committee engaged in while formulating the Policy, but from the substantial feedback we received for the Draft Policy. In addition to many endorsements, this feedback included some criticisms. But it was heartening to see that almost all the criticism was constructive and detailed in nature. It indicated that the authors were reacting to the actual policy statements, and not just to newspaper headlines or trending tweets. An immense behind-the-scenes effort was then undertaken to incorporate this feedback into the final Policy, which Dr Ramachandran was an integral part of.

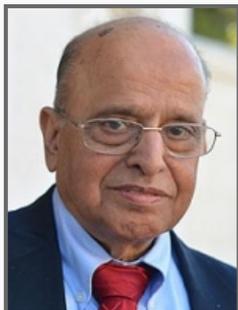
In conclusion, liberal education is a key pillar of NEP 2020. When implemented in the spirit we have articulated here, it can unlock all capacities of a human being – intellectual,

aesthetic, social, physical, emotional and moral – in an integrated manner. It is individuals with these characteristics who will one day proudly call themselves Indians. And that, we are certain, will be the bedrock for a better India and a better world.

Thank you.

Foundation Day Lectures

- 1. Alternative Perspectives on Higher Education in the Context of Globalization**
Prabhat Patnaik (2007)
- 2. Designing Architecture for a Learning Revolution Based on a Life Cycle Approach**
M. S. Swaminathan (2008)
- 3. Universities in the Twenty-First Century**
Andre Beteille (2009)
- 4. Education, Autonomy and Accountability**
Mrinal Miri (2010)
- 5. Twenty Years After: The Countryside and Two Decades of 'Reforms'**
P. Sainath (2011)
- 6. Children's Right to Education in Areas of Civil Unrest**
Shantha Sinha (2012)
- 7. Education and Modernity in Rural India**
Krishna Kumar (2013)
- 8. Imagining Knowledge: Dreaming Democracy**
Shiv Visvanathan (2014)
- 9. Education as an Instrument of Social Transformation: The Role of Mother Tongue**
T.K. Oommen (2015)
- 10. Am I an Educated Person? Reflections on 'Becoming' and 'Being'**
T.N. Madan (2016)
- 11. Changing Perspectives: Neo-liberal Policy Reforms and Education in India**
Kuldeep Mathur (2017)
- 12. The Poor B.A. Student: Crisis of Undergraduate Education in India**
Manoranjan Mohanty (2018)
- 13. Governing Academic: Within and Without**
Pankaj Chandra (2019)
- 14. Education and Social Opportunity: Bridging the Gap**
A. K. Shiva Kumar (2020); *(Delivered online)*



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Dr. Kasturirangan is a Member of all the four National Science Academies and several International academies. He is a Member of the International Astronomical Union and a Fellow of The World Academy of Sciences. He is the only Indian to be conferred the Honorary Membership of the International Academy of Astronautics, besides being its Vice President (2003-2005).

He has won several awards including Brock Medal (2004), and Shanti Swarup Bhatnagar Award (1983) among others. He has been conferred with the highest civilian honours Padma Shri (1982), Padma Bhushan (1992) and Padma Vibhushan (2000) by the President of India, and Award of 'Officer of the Legion d'honneur' (2002) by the President of the French Republic, France.