

Implementation of
National Education Policy
[NEP]-2020
in Higher , Technical and
Agriculture education,

Central message to colleges

Try to focus on technological innovation, IPR, start-ups, creating Entrepreneurial eco system for Atma Nirbhar Bharat, faculty growth to world level, becoming idea centre, disruptive idea generation, give dreams of creativity and professional development.

By

2. What are the Major recommendations of NEP-2020.

- *Teach students to learn skills of research, skills of innovation and skills of entrepreneurship.*

1. National Research Foundation created with Rs 50,000 crore budget.
- *2. Education should be closely related to the world of work*
- *3 Education Should now be aligned to world dynamics. What are the opportunities & challenges? Immense.*
- *4 Create National Higher Education and **Research** Council combining UGC & AICTE*
- *5. FDI in education permitted -Budget of union finance minister-*
- *6. should Method of education change? Good bye to Rote learning, introduce creativity Experimentation*
- *Promote entrepreneurship education to create Atma Nirbhar Bharat*

3. India proud of progress made after 1947.

Can & should India regain glory of Nalanda? -

- Brain race: why Indian students are going abroad? How long they should go? Where is India in world ranking? Is it a challenge to make education attractive?
- 3-4 years back P M declared determination, to groom 10 universities from public and 10 from private to appear in the world ranking
- But so far None came up. Why?
- Ten Chinese universities in this period however climbed up the ladder
- **Universities from small countries like Singapore, New Zealand, Israel, Switzerland rank high in world list.**
- Why universities of big India cannot? Are they short of money? or they are short of compatible strategies?
- Indian Youths are desperately seeking jobs in emerging skills & technologies. Can they be generated in India? Yes. But this requires innovative colleges. So says NEP-2020.

4. Where do the Roots of unemployment lie? They are in Insufficient innovation and insufficient entrepreneurship. This is the major barrier in job generation.

- Abandon old, traditional methods-Make colleges innovative and Enterprising-educate students relevant to world of work. Should they have spirit to help industry/agriculture win?
- **As a result Persons with innovation skills in India are in short supply. Lack of innovation is the major barrier in job generation, and employment**
- Innovation is a strong stimulant, innovative persons work with passion,& endless energy. Most of innovations have come in India from abroad.
- Innovative people are never unemployed. They innovate & again innovate to create new. They create wealth
- **learning has to be innovation oriented, creativity and entrepreneurship oriented, so as to make Indian economy rich.**
- Industry cannot do all the research & innovation it needs to be competitive globally. **University & Industry must join hands to do collectively.**
- Small countries like Singapore, Newzeland, Israel have world class universities, and so they are developed. It is a strategic failure of India ,due to poor Governance.
- **World best colleges are fostering the culture of research, innovation & start-ups. Nations are flourishing which lead in research & innovation, others trail behind. They provide seeds for professional growth.**

5. What is the difference between our colleges and foreign? They emphasise on research, innovation & entrepreneurship.

- Research & innovation brings life in college and joy in teaching & learning
- They teach sunrise technology, we teach sunset.
- They produce leaders in technology, we produce followers
- They achieve excellence, we are still mediocre. We need to aim at excellence.
- Students & professors are not challenged if there is no innovation.
- America went ahead of Europe only after universities emphasised research, innovation & entrepreneurship
- Thomas Jefferson president gave this philosophy to USA in 1801
- Their college labs are always innovating, our labs are testing to understand known theories and technologies.
- Their Universities are engines of development ours's are bogies
- Their professors are world class, if our professors do not grow to world standards, India is at risk of being thrown behind in brain race.

6. Measure of the strength of a nation now lie in IPR and Chips, instead of in the size of army and arsenals.

- IPR & Chips have assumed more importance than land, gold, minerals etc . **For ex Mobile case. IPR can grow in knowledge generating colleges**
- **How is ranking of universities/colleges & IPR linked with prosperity of India?**
- ***Even if a country is rich in natural resources, & minerals, without world ranking it cannot become prosperous, and developed. Intellectual competency is critical.***
- **Without world ranking universities & colleges can India ever become a developed country? No**
- Theory of education says, ***education does not grow where research is absent.***
- ***Research is the seed corn for the harvest of benefits.***
- ***Institutes abroad are engines of development, in India they are followers like bogies.***

7. How Stanford university became a power house? It produced 3000 start ups in Hi-Tech with high pay. Can India not do that? Yes.

- **Stanford & Silicon valley together have created an eco-system of enterprising society. So the California region is most innovative.**
- It has become a magnet for scholars and start-ups
- Elon Musk came to this place from South Africa.
- Stanford has a Research Park, where thousands of PhDs work in one campus
- **India is too slow to adopt university based approach to economic development.**
- AURP and Battelle report on **university related Research Park on regional innovation & growth** worth reading, available on net.
- China started 100 parks, 25 years back. Its progress is attributed to research parks
- **Anil Kakodkar report recommended to Maharashtra government to install parks.**
- **Engineering colleges may like to come together and start Research Parks. They will win.**

8. What does NEP-2020 recommend? installation of innovation centres, Incubators, Research Park, IPR, VCF etc. with industry/agriculture.

- Mandate from NEP now is- **to make education innovative & enterprising**
- **Close relationship of education with the world of work is recommended.**
- **Design courses to enlarge the outlook of students to professions & problems in them.**
- **Innovation is foundation of start- ups, and start- ups are necessary to bring new ideas to market. and make Atmanirbhar Bharat.**
- Teach not only subject matter but current/future problems in professions.
- **Problem based Learning [PBL] is envisioned.**
- **Unless a professor is involved in industry/agriculture oriented research & innovation, he has very little current and relevant knowledge to teach. He tends to teach sunset knowledge, incompatible to global opportunities. Teaching gets a force, depth and sharp edge if engaged in innovation. world class professors make institutes world class. They build human good capital**
- Syllabi ought now to state professional problems and guide students to find solutions
- **Teach emerging skills in research, Innovation & entrepreneurship**
- NEP envisions India to become a **World education hub & Atma Nirbhar Bharat**

9. Is Indian industry propelled by foreign ? Does Atma Nirbhar Bharat envision self sufficiency? How long to borrow technology from abroad?

Mismatch in education & job requirement

Lowly educated &, lowly funded education

- Import of goods and services is far more than export- import in defence is too high
- **Ranking of Indian institutions in world list is too low. We work efficiently but not effectively.**
- High Brain drain/ money drain. **Thousands of students every year go abroad for higher education.**
- Poor implementation of Autonomy, Too much interference of government in autonomy
- Professors/students have capability, creativity for innovation, but unused/untapped. Training of professors for innovation essential. Role of management vital.
- Poor service conditions of Indian professors Vs international
- **poor governance & poor leadership at central/state/college/university is the main cause**
- Global winds of change not cared for. Strategies, Visions & missions improper
- **Institutions have all the required resources except world class professors. They retire far too early, They are bound by outdated service conditions, rules & regulations.**

10. How much budget allocated to Atma Nirbhar Bharat?
Rs 30 lac crores, for design & installation of modern technology driven systems, infrastructure in agriculture, defence, electronics, doing ease of business etc

- The traditional role of teaching, learning, examination, awarding degree, is good but not enough to meet challenges. **Innovations in design of new systems** needed
- Every professor and every student must have to dream to become an innovator to transform the profession. **Many colleges have five star infrastructure and all other things at hand, except world class innovative professors.**
- Now new role for colleges is to become idea centres to **produce innovators, creators discoverers, entrepreneurs, technology pioneers etc & make industry/agriculture win.**
- **Students seek big dreams, big ideas with wider imagination.** They intend to jump start to build hi-tech enterprises using latest research & innovation.
- **How many companies are born in institutes? How many new technologies, new theories, Patents & IPR are produced & used?** New jobs will come from new technologies and new industry, and not old?
- How to produce more entrepreneurs and encourage more firms to grow?

11. What is a corporate education centre? How important is Lifelong education? Is this the only way to enhance organizational capability?

- Giving education only once is not enough. Not only machines become obsolete but men also.
- **Obsolescence of knowledge & technology is fast.**
- Continuing Lifelong education, Corporate education keeping the human force competent in emerging skills all the time has become necessary.
- **Corporate education centres in PPP mode must be started in institutions. Mid career students be admitted.**
- **Technology transfer centres/industrial services centre from college to society must be started**
- Universities/colleges must produce captains & generals, technology pioneers of global standard
- **On line Courses for mid career industry personnel must be designed and conducted.**
- To make college innovative, creative and enterprising, use scientific strategic planning technique with SWOT analysis, by bench marking with role model institution,

12. Does India envision to become world education hub? It Can not become so without Research, innovation & entrepreneurship.

- **Remember- Rote learning tends to stifle innovative talent**
- NEP Poses many challenges to universities & colleges. The first & foremost is to make education relevant, **spin-off hi-tech start-ups**
- Imparting skills of research, skills of innovation & skills for entrepreneurship is prescribed by NEP.
- **Teaching only known knowledge and known technology does not suffice.** College to have knowledge springs, Like Well water springs?
- Not Rote learning but **understanding concepts** Learning based on experimentation, discovery, creativity is suggested.
- **Innovators & technology pioneers needed not teacher puppets**

13. How colleges can attract students from foreign? Do we need to make colleges innovative?

- **Will the institutes take this as a challenge? Then only students from foreign will be attracted for higher education..**
- **Then Brain drain & money drain will reduce. India will become prosperous and a developed country.**
- Creating World class universities & colleges in India is prescribed by NEP.
- Professors matter most. **Can they be equal to world best?** How? They ought to involve in research to create new knowledge, and new technology and make institutions enterprising.
- **A change in professor's mindset, reorientation to innovation is needed. Potential in each professor for innovation is vast but it has to be nurtured.**
- Students ought to be educated to make them innovation and creativity minded and not paper degree minded
- Global opportunities for creativity, innovativeness are too big but they have to be encashed.

14. What is Reverse engineering? Atma Nirbhar Bharat Abhiyan demands import substitution for goods like in defence, medical etc.

- **Institutes are expected to generate new knowledge, new technology, new theories, Patents & IPR, to cope with world dynamics, compatible to global opportunities and challenges**
- Imagination power of students to handle emerging unknown challenges must be enlarged.
- To spin-off new technology based firms, create innovative globally competent start-ups, products, processes etc and generate jobs in emerging skills.
- “ **First Mover Entrepreneurs**” in brand new technology are expected .
- Colleges ought to acquire innovative, enterprising character. They should not teach only known knowledge, but teach to discover unknown
- **Research parks is a meeting place for innovative minds from industry and academics, to facilitate exchange of experience and technology. Do we want Indian brands of technology? This is the only way. Research Park is a cradle for entrepreneurs.**

15. What steps Government has taken? Atal Innovation Mission, Technology Incubator, Hackathon etc. Should colleges not adopt?

- **BOGs ought to be innovative, outward looking, following global winds of change**
- **Professors ought to possess ambition to be equal to their counterparts in developed countries to groom technology pioneers.**
- They are the ones who enrich human civilization and take it to greater heights
- **Institutions are expected to transfer knowledge/technology to industry**
- Corporate education centres in PPP mode are expected to be opened.
- Institutions are expected to acquire new visions of new world
- **Effective licensing of IPR to promote job generation, technology diffusion, and economic growth is recommended. Unauthorised usage of IPR be punished.**
- World proven strategies are suggested in the book, available from Amazon & Flip cart

16. Why Synergy between industry and institute is urgent? Is India at risk for want of synergy? Can Alumni play a key role?

- **An institute cannot grow to its full potential all alone by itself. Internal working must be matched with external ideas from both industry and alumni. Benchmarking with world best must be done.**
- **A bird cannot fly with one wing. Industry & Institute are the two Wings of economy. They must synergies & function in harmony with each other.**
- Stand Alone, style of working must be abandoned.
- **An Institution, industry, and alumni must jointly dream and have shared vision to grow to world class level. It gives economic security to India. use collective wisdom.**
- **No college in world has ever grown without support of alumni & industry**
- **India at risk if universities & colleges do not share their future plans with alumni, and industry.**
- Opportunities for professional growth to professors ought to be increased. Deputing them to world best universities is recommended.

17. Is governance of education in India poor? Has poor governance in education crippled India? Is there a need for change?

- NEP has recommended to merge UGC and AICTE in National higher education and research council
- Government & governing bodies must benchmark with world best institutions, and care for global winds of change.
- India has all the things required to make universities world class, except good professors. **Faculty growth schemes be promoted.**
- Education does not grow where governance is ineffective.
- If the reforms do not happen, India will loose on global plane.
- **Colleges to submit proposals to National Research Foundation for research, innovation & entrepreneurship**

Grip of government on education to be reduced. **Autonomy** needed
PPP mode of operation to be practised.

How a college can earn reputation? What priority it ought to give to innovation? They have to go beyond teaching to innovation & entrepreneurship

- Professors ought not to be only teaching professors but also research professors.
- Schemes of faculty growth be promoted. Grant autonomy to colleges
- Introduce Entrepreneurship in courses, this will ease unemployment.
- Deserving professors should be enabled to grow to world class level.
- Reward students and professors for innovations
- Conduct Hackathons more in number
- Participate in industrial and agriculture exhibitions
- Grant leave/permission to professors to work with entrepreneurs
- Make service conditions compatible to visions & missions
- Depute professors to world best institutions
- Sincere efforts coupled with right strategy will bring glory to India
- **A massive program to upgrade research, innovation and entrepreneurship activities in colleges is the crying need, without which youths will remain behind the world**

19. What is the likely loss to India if NEP- 2020 is not effectively implemented and colleges do not become innovative?

- **India is likely to be trapped in low income, low growth, and low wage driven category of countries like African, instead of much desired high growth, high income, & innovative.**
- Dreams of youths in India will be shattered if agriculture & engineering colleges do not resort to research, innovation & entrepreneurship
- India will then remain a developing country, people will remain poor.
- Brain drain will continue, India will lose in brain race.
- Atmanirbhar bharat will remain a dream. India will not become a hub of education.
- So as to become a leader in technology and not remain a follower, innovative education is a must. Fortune article quote
- **If you charge education with the spirit of innovation, right strategy then you do not have to do anything for development. But if you do not do this and do every thing else, like building roads, electricity etc that is not going to matter much. All the problems like poverty, low productivity, etc. are due to lack of innovation.**

The association has shown able leadership, and made colleges/ Maharashtra a fore runner in technical education. Now, effective implementation of NEP could be their next vision & mission.

Best wishes to all
Thanks to association & Hon Shri Balasaheb Wagh, and you all.

INSIGHTS IN TO RESEARCH, INNOVATION & ENTREPRENEURSHIP

*For Higher & Technical Education – Challenge
of National Education Policy – 2020*



B M Naik

National Educational Policy-2020 recommends innovation infrastructure, like technology incubator, business incubator, innovation centre, patent & IPR centre, corporate education centre, Research Park, entrepreneurship centre, venture capital etc in institute campuses. India envisions ATMA NIRBHAR BHARAT and becoming "World Education Hub".

Many Indian universities are planning to be in top 20. They certainly have potential, but they ought to have proper policies & practices, systems & procedures. It is not a matter of just putting more money or appointing more men. It is a matter of using current and appropriate strategies. The book presents insights in to innovation & entrepreneurship for adoption.

So as to groom Indian students competent for globalised world, strategies outlined in this book need to be adopted. Universities & colleges have to adopt policies and help industry win. Industry also need to take a long range view and closely work with academia. The book is addressed primarily to Governing body members and administrators in government. The book deserves to be read, reacted and acted upon.



Prof B M Naik is the founder principal of Shri Guru Gobind Singhji Institute of Engineering and Technology, at Nanded, Maharashtra. He participated in many academic meets in USA, UK, Canada, China, Germany etc. He is the author of five books and many research papers. One paper was awarded prize by the Institution of Engineers [India]. He is known as a good institution builder, Who raised the college to world class level, for which he is honoured with life time achievement award by his alma mater, namely Government College of Engineering Poona. He is certified mentor by TEQIP, mentoring many engineering colleges and universities.

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