

# CATALYZING QUALITY ACADEMIC RESEARCH THROUGH NEW EDUCATION POLICY: PATH FOR IMPLEMENTATION

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## DOI

[10.29121/shodhkosh.v5.i1.2024.3513](https://doi.org/10.29121/shodhkosh.v5.i1.2024.3513)

**Funding:** This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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## ABSTRACT

Academic community of the nation has been invigorated by the announcement of New Education Policy, 2020. The community has started forwarding findings over the implementation issues of the policy. The policy has shown right destination, and now we have to find a potential path to reach that destination. Any policy is as successful as its implementation. The current article discusses the issues present in academia and proposes suggestions concerning the implementation of New Education Policy for the amelioration of academic research. The authors highlighted the issues of silo formation, admission criteria, funding, curricula designing, reskilling of teachers and skilling of students, infrastructure and resources, post-doc culture, internationalization, including immigration, emigration, and reverse migration, and maintaining the balance between research and innovation.

## Keywords:

## 1. INTRODUCTION

National Education Policy 2020 was recently announced on July 29, 2020. After a long period of 34 years, a much awaited and wonderful document in the form of New Education Policy, 2020 was rolled. This National Education Policy envisages a progressively revamped national education framework rooted in Indian culture that has the potential to transform India into an equitable and thriving knowledge-based society. It aims to offer all the citizens high quality education, and hence making India a global powerhouse of knowledge. It is also the first time in contemporary Indian history that initiative is not only developed but is also being implemented by the public suggestions. The participation of such a significant number of stakeholders in decision formation is both indicator and a promise of progressive growth of society.

Several new initiatives and reforms have been highlighted in this policy. It stressed the holistic development of the student. It has posed many concerns and paved the way to make India that is Bharata a Vishwaguru, the nation's ultimate goal. Knowledge creation and its internationalization being one of the major foci of National Education Policy is immensely commendable. The policy has laid due emphasis on the field of research and innovation and has paved a path to catalyze the progress of the nation through research and innovation. It admits that development and research are entwined concepts. It acknowledges the need of "significant expansion of the research capabilities and outputs across the disciplines" (Government of India, 2020, p. 45) as well as promotion of the indigenous arts and performances.

All policies are as successful as their implementation. Therefore, a successful implementation plan would also play a vital role in defining the success of this policy. The program of action for achieving the objectives stated in the present policy is still under construction and the suggestions were invited from all the citizens through the online platform of mygov.in between 28 September 2020 and 31 October 2020 (Department of Higher Education, 2020). The present scenario, the role we are looking upon that is of being a Vishwaguru and the time period considered in the policy, 2040 – in mind, we can infer that the journey will not be smooth. In order to achieve the goal set by the New Education Policy, 2020, we need to implement some radical and sustainable reforms. Several of these significant changes are proposed in the following section.

## 2. SUGGESTIONS OVER THE IMPLEMENTATION OF NATIONAL EDUCATION POLICY, 2020

Any aspect of the policy cannot be viewed through narrow vision. Almost all the factors are linked and interdependent. Catalyzing quality academic research is no exception. It relies on strategies in other fields of higher education, internationalization, curricula designing, financing, infrastructure, technology, skills, vocation and more. The following subsections address the brief overview of situations in current system, the priorities, and the direction towards the attainment of these goals.

## 3. BREAKING THE SILOS

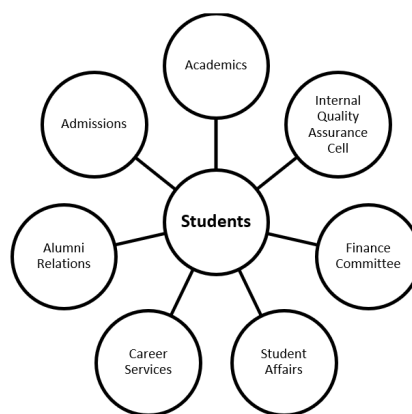
Silos in higher education sector are not confined to our immediate departments. There are silos around the campus. We may identify them between instructional divisions, foundations, and support structures for students. Such silos are planned to accumulate focus in one direction. Too often this approach overlooks interdisciplinary opportunities since they are not compatible with the current demands of the society and industries. A perfect vortex of transformation compels us to break down these silos – technology, massive crisis, modern demands of transparency, accountability and collaboration from students and leadership.

Academic perspectives and interactions through multidisciplinary classes contribute to doctorates best prepared for analytical thoughts, efficient communication, transformation of soft skills into hard workforce skills, innovative integration of knowledge and cooperation with different colleagues. Such gains are realized by university doctorates as a consequence of studies not being done on a common major or research route but rather the clear result of a learning atmosphere in which information is spread and obtained through traditional disciplines.

Consider the following functional areas of the university that are most important to students over the course of their lives. Admissions, Academics, Internal Quality Assurance Cell, Finance Committee, Student Affairs, Career Services, and Alumni Relations. At most institutions, these five units feed information downward toward students. In most cases, these units have minimal interaction with one another (Figure 1).

**Figure 1**

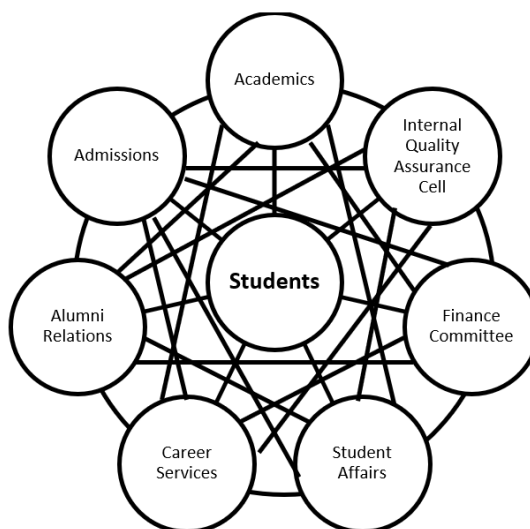
The Siloed Institution



However, there is another way in which these units not only communicate with students, but also collaborate with each other holding students in the middle (Figure 2).

**Figure 2**

The Interacting Institution



This model would increase the productivity of existing universities or academic structures through working in close coordination and sharing the data across the units. The universities in which this collaboration is present, should focus on improving its effectiveness.

Keeping the societal challenges in mind, National Education Policy (NEP) calls upon interdisciplinary and multidisciplinary research culture (Government of India, 2020, p. 45). In order to promote interdisciplinary and multidisciplinary culture, the silos of academic departments should be diluted to encourage cooperation between researchers and faculty members across disciplines as well as domains. The creation of new interdisciplinary centers will be preferable for the attainment of optimum outcomes. And we should also look upon promoting the mobility of researchers across the departments.

Currently, Choice Based Credit System (CBCS) is doing great in this direction. But there are still few issues with the CBCS system that need to be eroded. The inflow of students is higher in some disciplines than in other disciplines. This leads to undue pressure on the departmental employees, and often students are not given with their choice due to the high demand. In this case, the students have to opt for any other elective course in which they have little interest or may not associate themselves with other courses that they have to opt for. The same problems may be found in the promotion of interdisciplinary and multidisciplinary research ethos without the creation of new interdisciplinary and multidisciplinary centers.

Currently, many of the universities and departments around the nation have been shown to cultivate a particular philosophy that is lethal to the aspirations of NEP 2020. In addition, within departments, researchers are forced to adopt

discipline-specific methodologies that is brutal to the promotion of interdisciplinary studies. This need to be discussed and the entire academic community needs to resolve the problem together and redirect their belief systems.

#### **4. ADMISSIONS TO PHD: ENROLMENT AND EMPLOYABILITY**

Admissions to Ph.D. are being provided by the departments and there is a considerable variation in the admission processes of different universities. The admission process needs reforms and standardization. From early 80s, we are continuously aiming on the inclusion of the different classes and expansion of research community. We have seen the success too. But in this process, somewhere we have overlooked the quality of research production and that is being carried on today also. We need to review the process of admission and ascertain that only the students with right scientific attitude could get into the PhDs. Some people would object on this. But we want to assure that through achieving quality, we could easily achieve quantity. As presently due to deteriorating quality, even PhDs are unable to be absorbed by the industries. This sends a wrong message into the society. Improving the absorption rate that is employability, we would be able to enhance the community quantitatively. For this, restructuring of admission criteria along with the proper orientation of the scholars throughout the PhD program is needed. The current assessment of research is not being properly carried out and seems to be lenient, which should be properly carried out. Some harsh sanctions should be imposed on the researchers who do not abide by the laid standards, like discontinuation of funds. Such strictness is much needed to upgrade academic quality.

#### **5. FUNDING: CATALYZING PRODUCTIVITY**

At present, the funding of the research is largely carried out through the Junior Research Fellowship scheme that is operational along a varied range of disciplines. Junior Research Fellowship (JRF) is being provided by different governmental organizations in various fields of study. These JRF schemes provide the block funding to the researchers and are rolled out to enhance the quantity of research throughout the nation by providing financial help along with some other perks. The principle directive being the increase in research workforce. Some other schemes like National Fellowship for Other Backward Classes (NFOBC) and National Fellowship for Scheduled Caste (NFSC), Maulana Azad National Fellowship for Minority Students, and National Fellowship for Higher Education of ST Students (NFST) are running for promoting and facilitating inclusivity of deprived sections of the society.

On the other hand, some of the competitive funds have been established to complement block grants for research. They aim to build scientific capability and research infrastructure in frontier areas of science, to fill critical technology gaps and address new research problems, to strengthen multidisciplinary research and collaboration between the public and private sector. Some of these funding programmes such as National Agricultural Technology Project, Tata Innovation Fellowship, Major and Minor Research Projects, Research Promotion Schemes, CSIR Young Scientist Award, DAE-SRC Award are being provided to the researchers with innovative ideas. These competitive fellowships are being provided majorly in the areas of science and technology, but such funding is scarce in the areas of social sciences and humanities which is a serious concern, as without promoting the disciplines equally, we are not going to gain optimum benefits as the need of such innovative researches in the fields of sciences and technology are also dependent upon the similar researches in the disciplines of social sciences.

Although New Education Policy promises to provide competitive funding in all the disciplines, but along with that the vast gap of funding among the two poles have to be filled. Also, there have been many problems with the current funding schemes such as untimely disbursement and improper checking of fund utilization, as some of the researchers have affirmed so. The major problem faced by many of the researchers specially in Tier 2 and Tier 3 universities is that they are not getting the proper guidance over the available funding and other processes regarding these funding opportunities. So, along with the introduction of new funding opportunities, the existing funding schemes also need to be aligned and reformed.

#### **6. INDUSTRY-UNIVERSITY LINKAGE**

The industry-university linkage, which needs to be improved, is another area of concern about funding. As a developing country, the government has other priorities and cannot afford to spend significantly in research and development (R&D), but still it aspires to invest 2% of its Gross Domestic Product (GDP) in R&D by 2022 (EAC-PM, 2019,

p. 18). India's R&D investment has shown a steady, rising trend over the years. Even then, it is a fragment of India's GDP and remained stable at around 0.6% to 0.7% of India's GDP. In contrast to advanced countries, where private sector is the primary driving force behind R&D spending, government expenditure, almost solely the Central Government drives national R&D in India. In particular the government and private sector need further involvement in India's overall R&D expenditure especially in application-oriented research and technology development. In most developing and developed countries, industry's contribution to GERD is over 50%, whereas in India, it was 41% in 2017 and 2018 (Cornell University, INSEAD, and WIPO, 2020, p. 159).

While regulatory agencies like the University Grants Commission, the All India Council for Technical Education, and the Council of Scientific and Industrial Research have already started to concentrate on the industrial investment, they still have to make a long journey. Enhanced relations between universities and industry have the potential of transforming the research and development all around the country. This will also bring mutually beneficial benefit as growth in R&D would help universities to meet their expenses and expansion plans, while the academic researchers will partner with industry enhancing their skills and industries can be benefitted through the products of the research in form of new technologies and potential workforce with industrial experience.

## **7. ABOLITION OF M.PHIL.: A MAJOR SETBACK?**

Master of Philosophy (M.Phil.), a second master program and current link between the academic and research orientation has been abolished. Although M.Phil. was a purely optional programme, but it served as a gateway to research providing the prospective researchers a window, where they can gain research capabilities. Abolishing the programme has enforced to think over the reforms in the curriculum of bachelor's and master's degree programme. With the present curriculum which lacks the research orientation at these levels, it would be difficult for a student from a low tier institute to enhance their capabilities in research so as to compete with candidates educating from these Tier 1 institutes.

### **7.1. DESIGNING PRAGMATIC CURRICULA: INCLUSION OF REFLECTIVE, CRITICAL AND RATIONAL THINKING**

The Indian Higher Education System is every now and then alleged of promoting rote learning and the updation of the curricula in various programs is scarcely rolled out. We have to ensure the frequent updation of the curricula and that too in the light of current trends and research. The premiere planning agencies should collaborate with academic boards of universities to reform not only the syllabus, but the curriculum including methods of teaching and focus on the academic and research excellence. This excellence can be achieved by inculcating creativity, leadership qualities, research ability, values and ethics, critical thinking, reflective thinking, and rational thinking.

In addition, the internship should form an integral part of the curriculum at the bachelor's and master's level programme in order to provide the students with industry experience and real-world issues in their prospective fields. Leaders in each area should be invited to share their important experiences with the students. NEP 2020 provides the provision of executing such activities.

## **8. FACULTIES' RESKILLING AND STUDENTS' SKILLING**

There are two distinct facets of research and mentoring. In India, the faculty members are often strong researchers, but their mentorship fails. This is because of the lack of further instruction in grant writing, scientific communication, and laboratory management. Also, for achieving recommended objectives of promoting innovation and entrepreneurship along with the research lays emphasis on the dire need of reskilling the faculties as innovation and entrepreneurship is visible at only Tier 1 institutes of the country. Most of the academicians at Tier 2 and 3 institutes themselves do not gain much of the exposure to industry and thus are engaged in purely academic research, which is seldomly absorbed by the industry. Often faculty members at such institutes complain about being forced to enhance their relations with the industry and draw the fund inflow to the universities. It seems to be a mountainous task for them due to the lack of exposure. In this case as they themselves are not motivated and are not having the proper knowledge and experience, it is difficult to achieve the objective. Therefore, to promote the industry and society-oriented research and innovation needs the reskilling of the faculty members.



In order to motivate and prepare the students towards innovation and entrepreneurship skills, the reskilling of faculty members, their exposure to the industry through internships and their close collaboration with the industry is needed. Also, they should be taught about the importance of this linkage and exposure and the failure should not be rejected. The prospective researchers must be provided with proper insights and knowledge of the industry. One step for such a transformation could be making a provision of providing each research scholar a supervisor from academics along with a co-supervisor from the industry. Such ties would be beneficial not only for the skilling of students but also for the reskilling of the academicians.

## 9. PROVIDING INFRASTRUCTURE AND RESOURCES

The universities in India require significant development of infrastructures and resources. Many of the leading universities have inadequate facilities, including incubation centers, laboratories, and libraries. Libraries in most of the national institutes have insufficient subscriptions to journals and magazines. The provided e-journal facilities are also very limited. The physical science laboratories do not have much of the facilities. The equipment at these institutions are frequently out of order, so prospective researchers are not properly nurtured. Incubation centers are scarcely accessible in second and third tier universities. To solve these issues, the universities should cooperate with the local industries and explore opportunities to sign agreements on the shared use of equipment and facilities in those industries.

## 10. POST-DOC CULTURE

Postdoctoral studies are recent in India; the Indian science community has recognized the need of postdocs to boost research development in many areas. Most research activities currently rely on the work of doctoral students. The need for a post-doc resulted in many fellowship choices which vary in monthly scholarship from 35k-55k. Most fellowships usually fund between two and five years. One or two publications in a journal with high impact are expected by a post-doctoral fellow to enable them to get an independent role subsequently. From a foreign standpoint, it is not so daunting, however considering the time frames for the access to facilities and services and the fatigue to reach for the facilities which are scarcely available through the nation. Logistics have troubled Indian science for decades, but things are now starting to improve. Thus, while science standards are realistic, the deadlines are not in position to meet them. It would not alleviate the standard of research by merely offering a fellowship unless we engage in enhancing access to resources and organizing networking activities.

Another element of today's post-doctoral culture is mentoring. The education the researchers earn as a PhD or postdoctoral fellow offers research skills, but mentoring skills in the fellows are not established. Mentoring is a new game for them that must be improved by providing more experience in grant writing, scientific communication, and laboratory management, as discussed earlier. The other question rises about the availability of mentors for the post-doc fellows. While it is a new culture in India, the potential mentors for such post-doc fellows should also need to be identified and provided with the proper upskilling and facilities.

### 10.1 INTERNATIONALIZATION: HANDLING IMMIGRATION, EMIGRATION AND REVERSE IMMIGRATION

The eminent potential researchers in the country are emigrating on a large scale. This emigration is the resultant of the inadequate research system and the attractive lifestyle and facilities available in the developed counterparts. With a largely populous and developing country like India, this is but obvious situation to some extent. But we have to develop the scope of better working positions within the country with great infrastructure and industrial setup through investment in our logistics, academics, and research and development sectors to create the environment for absorbing such talents and stopping the phenomenon brain drain.

Along with this, we have to promote the indigenous ethos, quality education and provide state of the art facilities to attract the foreign students to undertake their education in India. It would help in strengthening the ties through international collaborations and further absorbing the foreign economy in our education system. These foreign scholars upon getting the satisfactory education, will boost the advertisement of Indian research community throughout the world. Currently the foreign students who pursue their education in India are mostly from the African and South-East

Asian countries which are weaker economies. We have to extend the support to attract the students from developed economies from the Americas, Australia, and Europe.

Along with controlling emigration and boosting immigration, reverse immigration is another area which needs to be focused. Reverse immigration is the process of Indian scholar gaining knowledge and experience from other developed nations and coming back to India to serve the nation. Facilitating business is another significant element in this process. India is doing well in this sector and needs to catalyze progress as India jumped 14 positions from 77th in 2018 to 63rd in the 2019 according to World Bank's ease of doing business ranking among 190 (World Bank, 2020). A proper strategy has to be developed for optimum effects.

## 11. MAINTAINING EQUILIBRIUM OF RESEARCH AND INNOVATION

The National Education Policy, 2020 strongly lays emphasis on the innovation and entrepreneurship. It is important to adopt innovation, but we have to safeguard the classical basic research at the same time. The shift should not come at the cost of sacrificing basic research. Innovation is not about creating knowledge but implementing that knowledge in the best possible way. The job of creating knowledge is carried by research only. So, maintaining the balance between the research and innovation should be the priority. These two activities of research and innovation should not be seen as silos but should be integrated within each other. This is one of the cruxes of NEP 2020.

## 12. CONCLUSION

The New Education Policy, 2020 has a potential to reform the research atmosphere in the country and it is the dire need of the hour. For this purpose, we need to identify the current issues in the research culture of the nation and take proper measures against them. Some of these issues are plagiarism, falsification, fabrication, misinterpretation, predatory publications, and improper knowledge of research ethics, collaboration, authorship, intellectual property rights and regarding translation of research. Although major provisions have been formed and enforced in this regard. But the lack of awareness among researchers can still be widely seen. In India, the efficient policies and measures are being framed at the government end, but the devil lies in the implementation. Implementation of any such policy is effective only when all the stakeholders, especially the practitioners at large are having ample knowledge about every issue and process. So, the awareness programmes and literacy drives should be given due weightage while formulating the implementation plan.

## CONFLICT OF INTERESTS

None.

## ACKNOWLEDGMENTS

None.

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