

Role of Technological Innovations in Higher Education

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ABSTRACT

Education is a basic requirement for achieving complete human dormant, developing an equitable and evenhanded society and promoting the development of the nation. Education system of any country should be based on technological innovations so that innovative and technology oriented people can be produced in the society. Change is the main feature of this universe. Modern environment is changing rapidly. An educational institute has to change itself according to the changing environment. New ideas, revolutions, methods and programmes are taking place in the business environment day by days.

Key Words: Technological Innovation, National Education Policy (NEP), Higher Education

1. INTRODUCTION

Education is a basic requirement for achieving complete human dormant, developing an equitable and evenhanded society and promoting the development of the nation. Education system of any country should be based on technological innovations so that innovative and technology oriented people can be produced in the society. Change is the main feature of this universe. Modern business environment is changing rapidly. An educational institute has to change itself according to the changing environment. New ideas, revolutions, methods and programmes are taking place in the business environment day by days.

2. Methodology

This main objective of this paper is to highlight the importance of technological innovations in the context of higher education. This study is based on various published and online sources and covers the higher education perspective and technological innovative promotional measures of the Government. Secondary data have been used as the main sources from which necessary information have been collected for the purpose.

3. Technological Innovations and Higher Education

Technological innovation has an important role in the success of the educational entity. Adoption of new technology results into more satisfaction of the students. New concepts of technology are useful for the management of framing the effective educational strategies according to the new trends.

Technological innovation is the improvement to existing technologies, the creation of new ones or the act of performing old functions with fundamentally new building blocks.

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Modern competitive educational environment requires technological innovation and discoveries for initiating the latest and advanced educational programmes. Government of India is supporting the technological innovation in the country by various measures. The National Institution to Transforming India (NITI) has been established by the Government, to persuade the researchers, teachers and scientists to involve in the research of technological innovations.

Government of India has announced the National Education Policy (NEP) 2020 on 29.07.2020. The main aim of this policy is to enhance the innovative knowledge in the students. The new National Education Policy 2020 proposes various reforms in the education system. These reforms will be implemented at school as well as higher education level which will include technical education. This policy will ensure universal access of education from pre-primary school to grade 12. Education for all children between 3-6 years will be necessary under New Education Policy. This policy includes the new curricular and pedagogical structure of 5+3+3+4. This structure comprises 12 years of school and 3 years of Anganwadi/ pre-school education. Special emphasis will be on promoting multilingualism and Indian languages under the new

scheme of this policy. Technological innovations can be used in educational programmes for attaining these objectives.

Technological innovation is the process in which new ideas are considered for developing the competitive theory. New ideas are the base for developing the latest concepts. Change is the main characteristic of the environment. Innovation is the never-ending process. Latest and advanced technological ideas of today will be outdated tomorrow. It helps to search new concepts on time. Technological innovation creates the value of the learning among the students. Educational organisation not only has to retain its existing aspirants but also add new ones. Various problems can be solved with effective techniques. Innovation process is used to find out the effective solutions. New technology and ideas lead to inventions. Invention is the advance form of innovation. New technology results into new approach. For achieving the success in the operations, new approaches help a lot. Better growth strategies can be made and implemented through technological innovation. Innovation process is an important part of research. Research discovers new business opportunities. Innovative ideas help the researcher to apply the latest techniques and tools for developing the better framework of recommendations.

Government has emphasised to increase the expenditure on research and development in the area of science and technology. Table 1 depicts the total outlay of the Government for the development of science and technology.

Table 1: Total Outlay and Expenditure of the Government During Eleventh Five Year Plan and Outlay for Twelfth Five Year Plan (2012-17)

Departments	Eleventh Plan (2007-12)		Twelfth Plan (2012-17)
	Outlay (Rs. Crore)	in Anticipated Expenditure	Outlay (Rs. In Crore)
Department of Science and Technology	11028.00	8636.61	21596
Department of Biotechnology	6389.00	4832.24	11804

Source: Twelfth Five Year Plan (2012-2017), Volume I, Planning Commission, Govt. of India

Above table reveals that the Government has increased the outlay of the Department of Science and Technology and Department of Biotechnology for the technological development up to two times as compared to previous plan. Document has suggested investing two per cent of the GDP in this area.

- **National Mission:** For promoting the technological innovation in the area of water, agriculture, energy, health and environment, the plan document has suggested for implementing the national mission for establishing coordination between interdepartmental and interministerial collaborations.
- **Strengthening of National Science and Engineering Research Board (SERB):** SERB was established for promoting the basic research. Department of Science and Technology has proposed to invest up to thirty five per cent of its budget through SERB.
- **Development and Deployment of Technology:** The Plan Document has emphasised the deployment of technology rather than demonstration in the thrust areas, like water, energy, agriculture, chemicals and environmental sustainability. Technology Mission for biomedical devices has also been proposed in the document. Department of Science and Technology (DST) is committed to support its programmes and schemes to support the development plan of the Indian science and technology for attaining the global leadership.
- **Patent Acquisition and Collaborative Research and Technology Development (PACE):** The Department of Scientific and Industrial Research (DSIR) will support this programme for acquiring the intellectual property at early stage within the country and abroad. This scheme will promote the research collaboration between universities and industrial undertakings.

Central Institute of Educational Technology(CIET) is promoting the technology in higher education to the great extent. This institute is a constituent unit of NCERT which came into existence in the year 1984. This institution was the result of merger of Center for Educational Technology(CET) and Department of Teaching Aids(DTA). Central Institute of Educational Technology is a premiere national institute of educational technology. Its prime aim is to promote utilization of educational technologies viz. radio,TV, films, Satellite communications and cyber media either separately or in combinations. CIET undertakes activities to widen

educational opportunities. These types of steps promote equity among aspirants and improve quality of educational processes.

National Education Policy (NEP) 2020 has proposed setting up of National Educational Technology Forum (NETF) which will be an autonomous body. This body will provide a platform for free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration and so on, both for School and Higher Education. The main aim of the National Educational Technology Forum will be to simplify decision making on the induction, deployment and use of technology by providing to the leadership of education institutions, State and Central Governments and other Stakeholders. The curriculum of this programme will be the latest knowledge and research as well as the opportunity to consult and share best practices.

The NETF will perform following functions:

- I. To provide independent evidence-based advice to Central and State Government agencies on technology-based interventions;
- II. To build intellectual and institutional capacities in education technology;
- III. To envision strategic thrust areas in this domain;
- IV. To articulate new directions for research and innovation.
- V. To lay down standards of content, technology, and pedagogy for online/digital teaching-learning. These standards will help to formulate guidelines for e-learning by States, Boards, Schools, HEIs etc.
- VI. To maintain regular flow of authentic data from multiple sources including educational technology innovators and will engage with diverse set of researchers to analyse the data.
- VII. To conduct multiple regional and national conferences, workshops etc. to solicit inputs from national and international educational technology researchers, entrepreneurs, and practitioners.
- VIII. To Identify technological interventions for the purpose of improving teaching-learning and evaluation process, supporting teacher preparation and professional development, enhancing educational access, and streamlining educational planning, management, and administration including process related to admissions, attendance, assessments etc.
- IX. To categorise emergent technologies based on their potential and estimated frame for disruption, and periodically present this analysis to MoE

4. CONCLUDING TALK

Education sector in India is growing in the transforming process. This new process has changed the traditional aspect of education from simple classroom to smart class rooms in which smart educational devices are being used by the teaching community. Smart class room is entirely the product of technological innovation. University Grants Commission has also set standards by giving the approval to online learning which is not possible without technology and innovative practices. Massive Online Open Courses (MOOCs) is providing prodigious help to individual educators and higher education institutions to cater to the online demand. Online learning through virtual classroom has brought revolution in the higher education sector. Considering the importance Technological environment has a significant impact on innovation. Environmental factors, both internal and external affect the technological innovation in higher education. The technological innovation process of any higher educational institution depends on the environmental forces like the attitude, taste and behavior of the students, policy of competitor, educational policy of Government, international market requirements, cost of educational aids, placement policy of the educational institution, employment trends, technical aspects, knowledge application strategies, approach of teachers and philosophy regarding innovation of the curriculum. Hence, integration of technological innovation in higher education can bring a unique revolution.

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