Reshaping Learning and Teaching: Ensuring Equal Accessibility, Affordability and Multi-Disciplinary approach in Higher Education through Technology

Talsaniya Gauravkumar Kanaiyalal
Central University of Gujarat, gauravtalsaniya@hotmail.com

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Reshaping Learning and Teaching: Ensuring Equal Accessibility, Affordability and Multi-Disciplinary approach in Higher Education through Technology

Talsaniya Gauravkumar Kanaiyalal

Research Scholar, CSSTIP, Central University of Gujarat, Gandhinagar - 382030

Abstract: The government of India crafted and then launched National Education Policy (NEP) on 29 July, 2020 to reform Indian education system that ensures equal access, affordability, quality, and accountability to each citizen. The policy targeted towards emerging demands and requirements for knowledge and skill to empower the citizen. It has many features including a new structure of 5+3+3+4 curricular that emphasises early childhood care, recognising a need for literacy and numeracy, introducing vocational education, technical education and internship in school from 6th grade, setting up a National Assessment centre called "PARAKH" to ensure learning and development, and ensuring education become more equitable and inclusive, especially to the socially and economically disadvantaged groups. There are some issues such as lack of modern infrastructure, low teacher ratio in schools, colleges and universities; fewer efforts to promote the English language from early education, and lack of resources to provide adequate skill and training to students that need to address for efficient implementation of new education policy. This paper attempts to address recent advancement in technology such as Artificial Intelligence (AI), Machine Learning (ML), and Internet of Things (IoT) plays a vital role to break such barriers and help the government at the initial stage to implement new education policy in an efficient and effective manner.

Keywords: Education, Technology, National Education Policy (NEP)

I. INTRODUCTION:

First, this paper does not merely highlight or describe the key features of the NEP (2020) drafted and implemented by the government but addresses its vision to solve the present-day educational problem and how it will function in India. Second, it prioritizes the key issues and how recent advances in technology became efficient and effective tools in achieving the agenda of the NEP (2020). There are many critical issues of the educational system that remained unresolved after the independence of India. The high dropout ratio, poor education in rural areas, increasing unemployable outcomes, 70 per cent adult illiteracy, lack of efficient evaluation system, and outdated technical curriculum as per existing industry requirement is the main problem of the Indian education system (Adiseshiah, 1977). Also, the irrelevant curriculum, an unproductive education system, less inclusiveness in the education system, increasing inequality in the distribution of resources and access to opportunities, only a specific class of people access the education (i.e. wealthy), and most the young people are just above the criteria of semi-literate was main critical issues behind illness of education system in India (Abraham, 1976).

At the time, when different stakeholders such as government officials, citizens, academicians, teachers and industry professionals evaluate that the current education policy does not address the emerging issues and needs immediate significant improvement, the government initiative to draft a new policy about education. The new education policy addresses all present problems by implementing structural change in the education system. However, the main focus of the NEP (2020) is to produce more innovation-driven young academicians. The objective is not only to improve the structure of the education system but meet the emerging needs of the industry and various stakeholders by providing skilled and talented young people (Aithal, et al., 2020)

Over the last two decades, many talented and skilled Indians have shifted to other countries to improve their careers. As a result, there are very few bright minds left in India. To address this issue, the government must propose an action plan and reframe the structure of the education system so that it can attract young talent and make a significant investment in science, technology and innovation (Luckett, et al., 2020). In addition, the university needs to offer student exchange programmes within and across the country efficiently and effectively. It gives opportunities to the students to explore and learn from faculties across the world. It is necessary to make a university curriculum in subjects such as science and technology in accordance with emerging development made in science and technology. Thus, the suggestions or opinions from several

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stakeholders are taken into account while building new or improvising in the current policy framework. Further, we also need to keep in mind that there should be no interference to weaken the autonomy of educational institutions by any political or bureaucratic interference. Amartya Sen, a Nobel Prize winner in economics, address his concern about the political interference in the appointment at Indian institutions (i.e. in top-level potion). As political interference is becoming a reason for the continued decline in the quality of educational and research institutions, it is necessary to identify such issues before implementing or formulating a new education policy (Sheikh, 2017). It is required to change the poor image of Indian higher institutes to include them in the list of global-top universities. Shanti Swaroop Bhatnagar, the Indian chemist and first director of general of the Council of Scientific and Industrial Research (ICSI); in response to the concern of A V Hill, the biological secretary of the Royal Society of the United Kingdom (UK), over a drain situation of CSIR laboratories, asserted that due to political favoured appointment is the main reason for the poor shape of university (Kumar, 2006). It is our mistake to assume the role of Vice-Chancellor of higher universities in India as managing the university and considered the head of administrative work. The work of the Vice-Chancellors or other top officials of the institution should be beyond the managerial roles. They must focus on raising the spirit of creativity, encouraging students to innovate, and improving their questioning ability. There are several problems pertaining to the Indian education system, for example, the mentality and behaviour of students towards education, lengthy curriculum, exam pattern, less approach to interdisciplinary education framework and rote based teaching and learning process that need to be appropriately addressed by policymakers to improve the quality of education in India. Most students and even their parents are interested in passing the degree and getting a job rather than focusing on understanding education as the only goal. Sometimes, it is not enough to borrow ideas from a western university and implement them in India without investigating why and what is the reason such ideas originate only from a western university. Initially, many professors and students protested against the idea of launching Massive Open Online Courses (MOOCs) and introducing a Choice Based Credit System (CBCS) in higher education courses. They believed these ideas were not workable in the Indian situation (Kumar, 2015). Thus, it is necessary to spread awareness about recent development made in the field of education from time to time among students and teachers. And therefore, Government needs to encourage research and development in the field of education.

II. EDUCATION AND POLICY: NEED FOR NATION-BUILDING

Education is the backbone of the progress of any country in terms of economic, social and democratic. One cannot deny the role and necessity of implementing a robust education policy as the future of a nation and their citizen in terms of development and sustainability depend upon it. The policy must focus on developing individual capabilities, both cognitive and non-cognitive. The purpose of the drafting of NEP (2020) was to revise and revamp the old traditional structure of education through changes in rules and regulations that meet the required criteria to fulfilled sustainable development. However, while drafting the policy, concern over keeping Indian tradition, culture, and values remained maintained.

The future of any country is predicted based on delivering equitable and inclusive education to their citizen. It is not significant for economic growth only but ensures justice and equality, both social and legal delivered to the citizen in a fair and just manner. Such progressive thoughts behind the education system must be recommended for a country with a high young population as their contribution has a significant impact on nation-building (Altbach, 2009). Further, the 2030 agenda for sustainable development includes quality education as one of the goals, which "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (Owens, 2017). All countries agree to adopt and achieve the sustainable development goal (SDG), and India is not left behind. The concern of SDG-4 (quality education) is reflected in NEP-2020 as it aims to restructure the entire education system in the country. In addition, the recent advancement in technology due to Artificial intelligence (AI), Machine Learning (ML), Internet of Things (IoT), Blockchain, and Deep Learning (DL) resulted in the replacement of unskilled work through automation. As an outcome, the demand for skilled workers increased in every sector that requires a multidisciplinary approach. Thus, the education policy must address the necessity to include a multidisciplinary approach in the education policy framework. Indeed, it also focuses on the learning process of a child. While drafting education policy, it considered the need and importance of a pedagogical approach to education. Further, it addresses the demand to change the old followed curriculum. As a result, it increased the potentiality of learners in critical thinking, decision-making power, creativity, innovation, problem-solving abilities and more. At present, the focus of the government of India is to build an education system that provides access to lifelong quality education to

all citizens irrespective of their social, economic and political status or backgrounds (Khan et al., 2022).

However, education is not a new idea or concept for Indian citizens. If we study the ancient Indian text, we can find out that the goal of life is not only to live but to self realize one's potential by continuing on the path of getting knowledge, wisdom and truth (Yadav, 2018). For example, people from different backgrounds and across the country came to ancient Indian institutes of learning and teachings like Nalanda, Takshashila, Mithila, and many others, to gain knowledge and do research. Some of these institutes also adopted a multidisciplinary approach to education as many students across the country came to learn and share knowledge about different disciplines. In addition, the scholars pass out from these institutes also mark India's name at the world level in various domains or subjects such as astronomy, mathematics, medicine, engineering, fine art, surgery and more. Regarding the teacher's position, the proposed policy ensures that every teacher gets respect and value as their contribution to the growth of society and the nation is priceless. In addition, policymakers of education likewise ensure that the essence of dignity, respect, and autonomy of teachers must not have interfered; and the brightest mind in the country should be empowered and recruited into a teaching position. We believe that education is a stair to achieving economic and social equality, justice, and development; policymakers must ensure that even the last person in the row or corner of the world has access to education irrespective of their class or caste. The government, private sector and NGOs should make special efforts to support and help citizens belonging to the unprivileged, marginalised, backward class, and disabled categories. As an outcome, they can easily access education and be enabled to compete with others with equal dignity and respect. They can also excel in any field and get a top-level position and recognition in any sector.

III. BRIEF INTRODUCTION OF PREVIOUS EDUCATION POLICIES

After the independence of India, the first and second education policies were Proposed and then implemented in 1968 and 1986, under the leadership of the Congress (Indian National Congress) party. The government revised the NEP (1986) in 1992 to introduce new agenda for the equal promotion and accessibility of education for every individual in India under the leadership of the Prime Minister of India, P.V. Narasimha Rao. The gap between these two policies was only about 16 years. However, there was no policy drafted concerning the education system till 2019.

There was no established body or commissions for the education system of India during British rule. The Central Advisory Board of Education (CABE) set up two different commissions (i.e. University Education Commission and Secondary Education Commission) after the independence of India to restructure and improve the entire education system as per the necessity of an independent India. The decision has resulted from several promises made by the freedom fighter to the people engaged in the education sector. Besides, the constitution of India that came into force in 1950 articulated that education is not only the responsibility of the central government, but the state government is too responsible and makes necessary steps to improve the education system in their respective states under the guidance of the central government. The first Commission to be appointed in independent India was the University Education Commission of 1948, under the chairmanship of Dr. S. Radhakrishnan, to report on the status of Indian university education and suggest improvements and extensions that would be desirable to suit the present and future requirements of the country (Aggarwal, 1993). The purpose behind the establishment of the commission was not merely to solve the challenges in education that were not resolved during and after the end of British rule. The goal is to increase creativity, promote democracy and reduce social, economic and political inequality. For that, the commission created a university in all parts of India to provide higher education to all citizens of India and ensure that everyone has equal access to learning irrespective of social/economic background. Dr. A. Lakshmanaswami Mudaliar, an Indian educationist and physician, set up the Secondary Education Commission to propose a change in the education system at the high school level to solve the educational problem faced by Indians in 1952. The commission submitted its first report in detail to the government of India in 1953 to propose several changes like creating a uniform education system, the establishment of technical schools to provide technical education, setting up multipurpose high schools, and creating a diversified course at the high school level. All the proposed change stated in the report has practical applicability and has the potential to improve secondary education in India. Very Few educationalists criticised it as the report lacks the recommendation to encourage women to take an active part in getting an education, merely a replica of previous policy, and most of the suggestions are not possible to implement (Tilak, 2012).

The government of India implemented its first policy on education in 1968 to restructure the entire education system keeping required changes

articulated by educationalists, researchers, academicians and other significant stakeholders. The policy makes several recommendations to improve education like making Hindi a national language, promoting the mother language or regional language to be used in secondary level school, making the English language a medium of instruction in school, and making compulsory education for children aged between 6 to 14 (Khaparde, 2002). In addition, the policy also recommended spending 6 per cent of income by the government to extend education to every citizen of India; and promote the Sanskrit language in education as a part of cultural preservation. The government of India drafted a second education policy in 1979 and implemented it in 1986, with attention given to the deprived sections of society. The motive behind drafting an effective and efficient national policy on education is to transform the entire education system into a newly developed framework as per the requirement of the people. It introduced several new recommendations like providing fellowship for students belonging to economically backward classes, reservation in the recruitment of teachers belonging to schedule caste and tribe, promoting adult education, and suggesting the establishment of an open university (e.g. Indira Gandhi National Open University), and adopting the Gandhian philosophy in providing education in the rural area. To evaluate the impact of the National Policy on Education (1986) on the Indian education system, the government of India set up a new commission in 1990. The commission functioned under the leadership and chairmanship of Acharaya Ramamurti. Due to some reason, the formed commission did not work as expected. Soon the Central Advisory Board of Education was set up under the guidance of Janadhana Reddy, which was supposed to make and address required modifications needed to the National Policy on Education (1986). The National Policy on Education (1992) emphasised the need for transforming the Indian educational system with an emphasis on quality enhancement and stressed developing moral values among students and bringing education closer to life (Joshi, 2010).

The main objective of any education policy is to provide equitable access, opportunity and inclusivity in education to all people of India. Thus, policy plays a significant role in transforming education into a more efficient, effective and progressive way. As a result, the government of India drafted and modified the policy on education from time to time based on the necessity and requirements.

IV. NATIONAL EDUCATION POLICY-2020

The NEP (2020) was drafted with a vision to transform India into a sustainable, equitable, innovative and knowledge-driven society. It is necessary to provide quality education to all sections of society irrespective of caste, gender, religion, and race to achieve this vision. The curriculum should encourage the students to know, admire and value the constitution of India, devote them to the country, participate in nation-building and build the consciousness in people about their roles, duty, and responsibilities as a citizen of India. In addition, the policy also ensures that education should increase the knowledge, skill and talent of the learners to create a sense of how to fulfil the sustainable development goals, protect human rights, and actively participate in human well being across the globe. It helps to develop true potential in every citizen of India, and as an outcome, they can significantly contribute to the world effectively and mark their name as responsible global citizens.

The vision of the new policy to transform India into a global knowledge power is reflected in the framework as it covers every dimension of education with present-day requirements. The presented manuscript promises to promote multilingualism and the power of language, impart foundational literacy and numeracy, achieve universal access to all levels of learning, honour teachers—treating them as the heart of the learning process, build synergy in curriculum and guarantee autonomy, good governance and empowerment (Govinda, 2020). There are many initiatives proposed in NEP (2020) like introducing the structure of 5+3+3+4 in school-level education, addressing the need for early childhood care, the mission to achieve foundational literacy and numeracy by 2025, ensuring equitable access and inclusiveness to education at all levels irrespective of caste, race, gender, and religion; to develop critical thinking and problem-solving abilities in the learner, provide flexibility and choice in the selection of subject (throughout all level of education, especially in secondary school), building essential capabilities and skills in every student, transform the style of learning (e.g. rote learning) into constructive, transform assessment process into more conceptual and critical thinking centric, and recognition of talents from early childhood education. The new policy also addresses society about the significant contribution of teachers and how valuable their role in education is. There are several provisions like the appointment of teachers in a rural area, scholarships to the rural student, job opportunities for female rural students, an incentive to teachers to have a job in a rural area to promote quality education, make Teacher Eligibility Tests (TETs) compulsory for the recruitment of teacher at all level, and limited the transfer of teacher to

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control quality in education made in the new policy.

A.   Issues in Education:

There are radical changes proposed in the new education policy drafted in 2020. However, issues still need to be addressed to implement it effectively. The NEP 2020 aim to provide a multidisciplinary education by establishing a university is a time-consuming activity and near impossible in recent years. The reason is that already there is a lack of availability of permanent teachers and less enrolment ratio of a student pursuing higher education. Thus, the mission to propose multidisciplinary education is not feasible in the current situation. There is more focus on regional language in education. It is an appreciable step taken by the government. However, to access all quality education in all regional languages is difficult to achieve in time. The less focus on improvement in the English language is also an obstacle for students to read and understand books, papers, and articles available in the English language globally. In addition, providing vocational education from the school level is also an issue need to be addressed appropriately. It required a trained teacher. It is hard to achieve the main aim of education policy is to provide equal access to education for students studying in a government school or granted schools. There is a lack of resources and trained teachers in government and granted schools. Economic inequality is a challenge for the government to fulfil the agenda of NEP (2020).

B.   The role of technology in Education:

The recent advancement in AI, ML, DL and IoT significantly improved education systems in delivering content and information to every corner of India. Technology help teachers automate some of their non-teaching tasks, such as preparing report card for students (e.g. progress report), conducting and evaluating test, checking homework, preparing content for lecture, and more. Concerning child education, the education material produced and delivered through online games and animation is proved efficient and effective. The recent advancement also helps educators to make content more creatively so that it is easy to understand for the learner. It can help the government to achieve the agenda of NEP (2020). As an output, it makes education more accessible and affordable. Also, creating content and material in multiple languages is more convenient by using such technologies. The recent EdTech start-up is the output of

technological innovation to meet current educational requirements.

V.   CONCLUSION

From creating content to delivering quality education to every citizen of India, the technology proved to be an efficient and effective medium. Technologies have the potential to resolve challenges faced in the education system. It transforms the whole education framework into learner-centric. Further, the tools of advanced technology have the potential to solve challenges such as lack of teacher availability, a trained teacher for providing vocational education, a multidisciplinary approach to education, delivering a lecture in multiple languages, availability of high-quality material in all languages, 24-hour assistance, and universal access to education. As a result, the Government of India also takes into consideration the significance of technology in education; and the result stated several points on technology while drafting a new education policy for India.

REFERENCE

1. Abraham, A. S. (1976). "A Matter of Concern". *Times of India* Issue.
2. Adiseshiah, M. S. (1977). Opportunity to Face Basic Issues. *Economic and Political Weekly*, 2021-2022.
3. Aggarwal, J.C. 1993. *Landmarks in the History of Modern Indian Education*. Vikas Publishing House Pvt. Ltd. New Delhi.
4. Aithal, P. S., & Aithal, S. (2020). Analysis of the Indian National Education Policy 2020 towards achieving its objectives. *International Journal of Management, Technology, and Social Sciences (IJMTS)*, 5(2), 19-41.
5. Altbach, P. G. (2009). One-third of the globe: The future of higher education in China and India. *Prospects*, 39(1), 11-31.
6. Govinda, R. (2020). NEP 2020: A Critical Examination. Social Change, 50(4), 603–607. https://doi.org/10.1177/0049085720958804
7. Joshi, M. K. (2010). Library and information science education in India: Some government initiatives. *DESIDOC Journal of Library & Information Technology*, 30(5), 67.
8. Khan, P. A., Johl, S. K., Akhtar, S., Asif, M., Salameh, A. A., & Kanesan, T. (2022). Open Innovation of Institutional Investors and Higher Education System in Creating Open Approach for SDG-4 Quality Education: A Conceptual

Graduate Research in Engineering and Technology (GRET): An International Journal ISSN 2320 – 6632, Volume-1, Issue-8

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Review. *Journal of Open Innovation: Technology, Market, and Complexity, and Complexity, 8(1), 49.*

9. KUMAR, A. (2015). Challenges Facing New Education Policy in India. *Economic and Political Weekly*, *50*(52), 14–16.

10. Kumar, D. (2006). *Science and the Raj: A study of British India*. Oxford University Press.

11. Luckett, K., & Shay, S. (2020). Reframing the curriculum: A transformative approach. *Critical Studies in Education*, *61*(1), 50-65.

12. Owens, T. L. (2017). Higher education in the sustainable development goals framework. *European Journal of Education*, *52*(4), 414-420.

13. Sheikh, Y. A. (2017). Higher education in India: Challenges and opportunities. *Journal of Education and Practice*, *8*(1), 39-42.

14. Tilak, J. B. (2012). Higher education policy in India in transition. *Economic and Political Weekly*, 36-40.

15. Yadav, U. (2018). A comparative study of ancient & present education system. *Education, Sustainability and Society*, *1*(1), 1-3.

16. Khaparde, M. S. (2002). Educational research in India: Policy and practice. *Educational Research for Policy and Practice*, *1*(1), 23-33.

Graduate Research in Engineering and Technology (GRET): An International Journal ISSN 2320 – 6632, Volume-1, Issue-8

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