NATIONAL EDUCATION POLICY 2020: UNDERSTANDING & WAY FORWARD

Edited by

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notionpress.com

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ISBN 979-8-88833-662-5

To…

All those educators who make a difference through pursuit of their knowledge and work

leading onto the path of truth and wisdom

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Acknowledgments

We place on record the names of all those who contributed in several ways to the completion and publication of this book in its present form.

Dedication, first and foremost to the almighty, who gave us wisdom and guidance on every step that we took on this journey of attaining knowledge on the subject of National Education Policy 2022 on an everyday basis and through paths unknown, we were given directions that made us possible to find true knowledge and direction to accomplish this project and complete writing the book.

Members of our family deserve special mention without whose continuous support and cooperation, we wouldn't have been able to work with commitment and dedication to compile and collate this work of mammoth nature.

Further, each contributor and author who took out their valuable time in writing on the subject of NEP and could submit their manuscript on a timely basis, we thank each one of them. Without their steadfast efforts and expertise, this work wouldn't have existed even. We express our deepest indebtedness to each author whose critique and experiential wisdom have enriched each page of this book, and we believe and have faith that each reader would immensely benefit while reading and turning the pages of this publication.

We express our ineffable thanks to the entire team of reviewers who scrutinized each manuscript and checked for the facts and if any detail

missing, ensuring the flawlessness of the book within the stipulated time frame.

Last but not the least, our Publishers and the entire team at Notion Press deserve our heartfelt gratitude. Their conscientiousness and eye for each detail made this book look and present this work, in its present form.

Foreword

My heartiest congratulations to both the editors: Dr. Priyanka Kumari and Dr. Pratibha Kumari Singh on the publication of this important book on National Education Policy 2020. NEP 2020 being the first education policy of the 21st Century becomes very instrumental in revamping the entire education system by offering revisions and regulations in the areas that are imperative for the overall development of the Indian education system ensuring 'universal access to quality education.'

This book, therefore, is very promising and presents a deep understanding of the concept of NEP 2020, highlighting all those key areas and issues that require attention from the Government and administration for the effective implementation of this Policy with immediate effect.

It becomes a massive responsibility for the editors and a challenge as well, to deal with a subject that requires much attention and deliberation across all levels of education: primary, secondary and tertiary. Therefore, this very attempt to take this topic of national and educational importance is something very useful and self-evident of its profound relevance.

I am confident that all the educators, teachers, professionals, academicians, administrators and authoritarians will immensely benefit from this book. Because, this book, not only describes and discusses the key points and relevant terminologies of NEP 2020 but also provides a very comprehensive guideline on its effective implementation and integration. Questions such as: what is this policy? What are its main features? What is its relevance? What are the key issues and challenges? Probable solutions to deal with

those issues and challenges have been covered and delineated in a very comprehensive manner.

Once again, I congratulate all the contributors, publishers and editors for their valuable inputs and workings in this area that requires deep understanding and attention. May readers and users find all their answers and revelations in this book and immensely benefit from it.

Wishing great success to the entire team!!

Best wishes

Preface

The new age demands and requires a new way to teach and learn. The present global scenario is challenging and amidst this, education becomes all-inclusive and holistic in nature. Specialization is required, at the same time, breaking of the silos of each knowledge field becomes relevant and important. In this context, this **New Education Policy 2020** becomes very relevant and significant.

This policy, which comes after the earlier two education policies has very promising objectives and vision. The extensive and elaborative document released by the Government of India describes all those parameters and nuances that are important for each level of education.

A lot of efforts and initiatives across India are therefore being taken at the level of the Government, Ministry of Education; Ministry of Human Resource Development; University Grants Commission, AICTE to name a few and by the other Private Organizations and Institutes to implement and execute this policy into the Indian system. Easier said than done, though this task is. Since each new system and paradigm requires time and effort at each level, thus, this implementation of this policy is also taking place in various phases and stages.

This book, with the valuable contribution of the authors, has been edited and compiled with the efforts of all those writers and educationists who have been working in the education sector for almost a decade now. Their experience and expertise become the bedrock foundation of this book. The Title of the Book- 'National Education Policy: Its Understanding and Way

Forward' is written with this aim and focus to allow the educators and administrators at each level to facilitate deeper understanding that would be required at each level of the education hierarchy to implement and integrate this new policy into the system.

The existing education systems are already in their full force, momentum and rhythm. NEP requires a pause and a break in the systems to re-look and re-assess the areas where there are a lot of functional changes to be made and integrated. While the framework has been provided for the Primary; Secondary and Tertiary Level, however, time, resources, manpower, documentation, infrastructural support, grants and funding and many such issues need an immediate address at each level, and thus, it demands a massive approach and monumental strength to implement it in its full swing. This book, therefore, is a humble attempt by the editors to bring forth those key areas and elements that demand attention from each level of education.

We aim to make readers understand the very purpose and rationale behind the introduction of this new policy. Address those key concepts and areas that make it robust. Bring forth those challenging elements that might impede its integration and issues that might instill its growth and integration into the system and thereby, providing a way forward to work on those issues and challenges for the effective inclusion and implementation in the accelerated mode.

– Part 1 –

Critique NEP 2020

Chapter 1

National Education Policy 2020 of Teachers and Teachers' Education

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Introduction

The NEP -2020 is a new document on Education that has come into the present education system. In 1986 the document was constructed and after a gap of 34 years, this new document came. Earlier the concepts and educational Rules and Regulations were followed that related to Teacher Education but now, the government is forcing the new document to implement in the education system. Likewise, the regulations related to teacher and teacher education have to be implemented from the current academic session in all educational institutions. In this chapter, the author highlighted the teacher and teacher education given in the NEP 2020 and how were are they kept in order.

Teachers

The destiny of the nation is shaped in a classroom. So, the teacher is an essential being to make the children a knowledgeable person by shaping and molding them. Every society or school needs to appoint teachers. To get good teachers, some standards have been developed by the government.

Qualifications: The qualifications along with the teaching Degree have always been important for teachers. There were some trends in the cadre of the teachers-Primary Teachers, Pre-primary Teachers, Secondary Teachers and Higher Secondary Teachers along with the College Teachers in higher education. At present days minimum qualifications for the primary teachers is +2 and graduation; for Secondary teachers, it is post-graduation and similarly for higher education teachers. Likewise, the teaching degrees like primary teacher training and secondary grade teacher training certificates are issued by the government.

Later on, on 1995 August 17th, National Council for Teacher Education came into existence to govern Teacher Education. Hence, primary teacher education will be looked after by DIETs (District Institute of Educational Training) under the umbrella of SCERT (State Council of Educational Research Training). The Secondary Educational Institutions offered for Secondary Education are B.Ed. Colleges or Colleges of Education

established as (Bachelor of Education). The Master's Degree in Teaching is an M.Ed. (Master of Education) will be offered in Higher Education. The other courses like Physical education and various types of Diplomas and Degrees have gone under the power of NCTE for Teacher Education.

TET: The Teacher Eligibility Test is essential for the teacher in teacher recruitment. To improve the standards of the teachers, and for the improvement of the quality, the government has taken some meritorious steps in teacher recruitment.

Teacher recruitment can be done based on the disciplines like language teachers, science teachers, mathematics teachers, social science teachers, art teachers, physical education teachers, etc.

Medium of Instruction: Earlier in School Education, three language formula was implemented. The first language is the Regional Language, the second language is the national language or Hindi and the third language is the International Language- English. During the British Period, many English Medium Schools were established to offer Religious and Spiritual Education along with General Education.

Macaulay's Minute (1835): Thomas Babington Macaulay submitted the minutes about the importance of English Education for the Indians to Vice-Roy Lord William Bentinck in 1835 and it was approved by Vice Roy. Macaulay stated that "A class of persons, Indian in blood and color, but English in taste, in opinion in morals and intellect."

Multilingualism: This is the new concept in NEP 2020. Languages are having the power to communicate and express. Our Indian Government has permitted us to develop many languages. So, particularly for primary Education, the medium of Instruction must be in the mother tongue or regional language. Already we are having the three language formula but it is essential to preserve the customs and culture through our language.

Children below the age of 10 years are having more cognitive abilities to catch many languages. It will also be useful for the expression of their ideas and needs to fulfill their desires. Everyone should learn as per their

wish many languages and there is no force to learn the languages of other regions. Everyone has to accept the language of others and respect the language of others. At present many technologies are also developed to promote regional languages including the presentation and transmission of culture that will be done only by the languages.

School Education

Previous academic structure constituted of 1) Primary 2) Secondary 3) Higher Education levels. Primary Education includes 1-5 classes within the age group of 6-10 years. In English Medium Schools, only the schools are providing Kindergarten and Nursery Education however, these courses are not present in the Government and Non-English Medium schools or those offering education in regional or local language Schools. Some Schools are also having upper primary from 1-7th classes for 6 to 12 years students. A Secondary Education System designed for the 6th to 10th classes within the age groups of 11-15 years. In earlier years 7th class had the public examination system but later on, it was removed and at present only the 10th class or S.S.C. (Secondary School Certificate) having the Public Examination conducted by the SSC Boards of the respective states.

Some English Medium Schools like Kendriya Vidyalayas, Navodaya Schools and Ministry Public Schools are providing +2 Educations or Higher Secondary or Senior Secondary Education for 15-17 Years for the 11th and 12th classes. In some areas, it is also known as "Intermediate" or PUC (Pre-University Course). These Examinations are also conducted by Inter Boards. Earlier Universities conducted "Matriculation" Secondary Education and Later on this Course was removed and all Secondary Schools are conducting SSC Public Examinations.

Subjects taught at the primary level consisted of First Language or Regional Language, Mathematics, Science and Social Sciences. English and Hindi subjects were taught from 6th class onwards in state Schools. 2nd language will be Hindi (National Language) and 3rd language will be English (International Language) in Secondary Education, Science subjects will be

bifurcated into Biological Sciences and Physical Sciences from 8th class to 10th class School Subjects.

Higher Secondary Education

This type of Education is also known as Senior Secondary Education with Specialization in subjects like Arts, Science and Commerce Subjects. Nowadays many combinations like Management, Information Technology Tourism, etc. are being offered in Higher Education where the students can select courses based on their individual choices. These courses are for secondary classes where the students between the ages of 15 to 17 years come and classes of 11th and 12th are catered. The Certificates of Examination are awarded by the Boards that include CBSC (Central Board of Secondary Education) or ICSE (Indian Council of Secondary Education).

Many schools and public schools in Indian states are organizing +2 educations at School Level and after the completion of their courses and schooling, students get eligible to apply for the Higher Education state for admission in UG (Under Graduate Programs) of their choice and interest. The UG and from that level the state and Central Universities also conduct the examination and award Degrees in Higher education.

New Pedagogical and Curriculum Structure

The New Pedagogical and Curriculum Structure as per NEP 2020 are categorized at 4 Levels namely 1 Foundational Level 2) Preparatory Level 3) Middle Level 4) Secondary Level.

1. **Foundational Level:** It is sub-categorized into two sub-levels. The first sub-level is for 3 Years of Foundational Level of Education under Anganwadi and Pre-School/Balvatika or Nursery and Kindergarten Education. The second sub-level is for classes 1 and 2 for the Age Group of 6 to 8 years. Hence the foundation level of Education Consisting of 5 Years to make the child adjust to school in his early childhood.

In these foundation level Courses; Teachers should take care of the children in all aspects. Generally, the teachers have early childhood care Education and pre-school education Degree for the teachers. Teachers should show love and compassion to the children and make the children run towards the school with enthusiasm but not run away from the school.

2. **Preparatory Level:** The Preparatory levels of education also come under Primary education. It is 3 years of Education for classes 3 to 5 for the Age Group of 8 to 11 years. They named this level as preparatory level because it is the preparatory course for Secondary Education.

   The Teachers handling the preparatory level of Education have to teach Regional Language, Mathematics, Social Studies and Science Subjects. As per the NCTE (National Council for Teacher Education) guidelines, the minimum qualification for the preparatory teacher is +2 qualifications along with the DIET (District Institute of Educational Training) or D. Ed (Diploma in Education) Degrees.

   Teachers should be having training from the SCERTs and the Inspections are regularly being conducted by DEP from time to time for monitoring and regulation. The Government has to strengthen the primary schools by improving the infrastructure facilities and Institutional Facilities. In some states, the supply of textbooks and uniforms for the students and mid-day meal programmes should also be organized for the children at the primary level. Further, to ensure the health of the children it is provided that Doctors regularly visit every school for the checkup of the students, their health and hygiene periodically. The Government has made the provision that Doctors and their medical teams would facilitate the supply of medicines to students that too free of cost.

3. **Middle Level:** Middle level of Education is for 6 to 8 classes for the 11 to 14 years of the age group for 3 Years. This is early

Secondary Education. In this level, three languages formula will be implemented in School Subjects like First Language, Second Language and Third Language with the Mathematics, Sciences and Social Studies Subjects. This is the lower Secondary Education So that for 6th and 7th classes lower level of Degrees will be required to meet the eligibility criteria. Further, as per the government guidelines Secondary Education Degrees like UG along with B.Ed. (Bachelor of Education) Degrees are essential for Teacher Recruitment. The Specialization subjects include Language Teachers, Mathematics Teachers, Science Teachers and Social Studies Teachers as per their Methodology subjects.

Teachers at the Middle Level are having regular School inspections from the authorities along with regular training from SCERT or State Educational Colleges. The Curriculum should be revised every successive time interval from the guidelines of the National Curriculum Framework.

Teachers have to provide knowledge and enhance the skills and talents of students. Teachers have to encourage the students and provide a healthy environment in the school atmosphere. Literacy skills, sports skills, and language skills should be encouraged for talented students.

4. **Secondary Level:** The Secondary Level is for the classes 9th to 12th. 9th and 10th classes come under pure secondary classes and 11th class and 12th classes will come under Higher Secondary or Senior Secondary Level. The Age group of the Secondary Level is from 14 Years to 18 Years coming under pure adolescent Age.

   Teachers should have a graduation degree along with Secondary Education. Teaching Degree is (B.Ed.) for the classes of 9th and 10th classes. For these two classes, the teacher will be appointed who will be language teachers and pedagogical teachers handling Mathematics, Science, and Social Science Subjects. The Science Subject is again bifurcated into Natural Science dealing with

Botany and Zoology and Physical Sciences catering to subjects of physics and chemistry.

The Board Examinations will be conducted by SSC Board and Certificates will be awarded by the Boards. The Curriculum and other necessary changes will be done by the respective boards by following the guidelines of the National Curriculum Framework.

The Teachers Handling +2 Education for 11th and 12th classes should have a post-graduate degree. But right now those teachers also have to possess the Secondary Teacher Education Degree. The Secondary Education Course is having Specialization and many specialization courses like BiPC., M.PC., Commerce, etc, based on the interest of the student. If the student wants to go for sciences, he has to go for the NEET exam and those who want to opt for Mathematics, can go for the Engineering exam and so on.

The examinations will be conducted for the Inter or +2 Boards by the State Government and the Degrees will be awarded by the Boards. The Curriculum will be revised or framed by the respective boards by following the guidelines of the National Curriculum Framework.

Teaching Degrees (NCTE 2014 Regulation)

1. Early Childhood Care Education (ECCE)

   This is a Diploma for the teachers and this degree is eligible to handle kindergarten or Nursery Education. This is for a preschool education Degree.

2. D. Ed/D El. Ed (Diploma in Education/Diploma in Elementary Education): This Degree is useful to handle primary/upper primary classes up to 1-5 or 1-7th classes. These D.Ed./D El. Ed. colleges are under the Governance of State Bodies like SCERT and the Department of Education State Government.

Earlier this course is also called Secondary Grade Education Degree, Diploma in Education (D.Ed.) Degree. Later on, it was again modified as D.El.Ed. Degree. Initially, it was a one-year Duration but now it is extended to 2-year duration with four Semesters. There is a huge demand for the D.El.Ed. course and we need more primary teachers to strengthen primary education.

3. Bachelor of Elementary Teacher Education (B.El.Ed. Degrees): This is for the Elementary Education Degree. Elementary Education will be coined as (11 to 14 Years or up to 9th class) it is based on the Age of the Student. Teachers with graduation Degree are eligible for this course.

4. B.Ed. Degree (Bachelor of Education): It is a popular Degree among all the teaching Degrees. Earlier it is for a one-year duration but now it is two years with 4 Semesters. This course consists of training each student teacher with two method subjects. 1) Language method and 2) Method Subject / Pedagogy Subject.

   This course is compulsory for Secondary Teachers in many states including CBSE, Navodaya and Ekalavya Schools. Many states are also following the guidelines of NCTE for the establishment of colleges and also for recruitment.

5. M.Ed. (Master of Education): This is a Master's Course in Teaching and this Degree is essential for Teacher Education who wants to work in Colleges of Education or D.Ed. Colleges or SCERT & NCERT Courses. Earlier this course was a one-year duration and at present, it was two years with four semesters.

   This course consists of a dissertation or research on the current problem in school settings. The Curriculum can be framed or revised by the respective university from time to time.

New Trends in Teaching as per NEP-2020

1. 4-Year Integrated Teacher Education Programme: (For Pre-Primary to Primary)
2. 4-Year Integrated Teacher Education Programme: (For Upper Primary to Secondary)

These two courses were after +2 along with graduation (UG) and Teaching Degree. It is both for primary and secondary education. So, after some time many colleges are going to offer ITEP in their colleges. Students can opt any UG subject from Arts and Science or Commerce backgrounds. The other teaching Degree will be functional for up to some years as per the decision of NCTE.

Modern Trends in NEP-2020

Multiple Entry & Multiple Exit: The student can study for two semesters and 1 year in any Discipline and he can exit from the course and rejoin another course. For example, students who completed two semesters in sciences can join the other two semesters in Arts courses. The Value of the ending Degree is the same and the student will get his skills and knowledge as per his interest. There is no restriction for the students and they can exit and enter any course based on their interests.

This type of modern trend is very important, particularly for teacher education courses. The all-around knowledge and broader knowledge is very essential for the teacher and because of the new trend, the coming teachers are having updated knowledge.

Conclusion

NEP-2020 is now *the Gita* of the present education system. The contents modified in this document are very useful, particularly in our Indian society. Earlier this type of trend was observed and seen only in the western context, but at present, it is extended to our country also.

The second important highlight of NEP is integration of online classes, maximizing on the usage of technology and Digital Services for offering various Online and Diploma courses like MOOCs. Already SWAYAM platforms in UGC are offering hundreds of MOOC Courses for the sake of providing training to the students, teachers and the citizens of our country.

NEP-2020 has highlighted the teacher and the Teacher Education Courses. To enhance the quality of education in Teacher Education, the Commission has taken good meritorious steps for Teacher Education. The Destiny of our nation will be decided in the classroom by the teachers.

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Chapter 2

New Education Policy 2020: A Strategic Way Ahead

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Introduction

In each sphere of life these days, change turns out to be indispensable, be it at the local, regional, national or international level. Not only there is change happening but it is happening at a very fast pace, particularly in the areas of expertise technology and skill improvement. India, to reinforce its function as an information superpower and a USD 5 trillion financial system by 2025, is striving to have a colorful and globally acclaimed training device in the expertise-based economy and society. Moreover, to generate better employment avenues for the educated youths, efforts ought to have been made for talent development and vocational studies incorporating within the popular schooling machine itself that it may help our country become globally competitive and applicable.

It becomes an inevitable mission for India to reconsider the training system giving importance to industry-oriented, creative, trouble fixing and talent-based total schooling for higher productivity and alertness-orientated studying of the students so that the system is at par with worldwide excellence.

In this regard, the NEP-2020 report contains four elements - pre-schooling, better education, other key regions of attention and making it take place, emphasizing diverse policy projects for big transformation in education in step wise manner with the changes and call for within the enterprise and society across the world.

India is a younger nation and of the whole populace of the country, 15-26 years of age organization is extra than fifty-four percent, which means, a larger portion of the populace is within the young age group.The common age of an Indian is 29 years through 2022 and sixty-five percent of India's human resource pull is beneath the age of 35 years and about 12 million people are anticipated to enroll in the paintings force each year. As consistent with the ability gap have a look at performed by using NSDC

in 2014, there is a net requirement of 11. Ninety-two crore professional manpower utilizing 2022 in twenty 4 key sectors. It appears that there is a big gap between the requirement and availability of professional human resources. Similarly, some of the evolved international locations like the USA, Canada, Germany, and Japan, etc. are now getting older and they shall require new workforces for the replacement and India may be a vital supplier for the delivery of skilled manpower to satisfy the worldwide requirement.

It's surely high time for India to have such an audacious schooling policy to take care of the specified expertise landscape of the USA in particular and the world in general. Within the mild technological improvements for commercial revolution 4.0 like synthetic intelligence, large data analytics, robotics and block-chain etc. some of the essential tips and policy adjustments inside the NEP-2020 may be viewed as underneath.

1. **Allocation of 6% of the GDP towards Education**

   The task that Indian higher schooling is going through has many folds. The number of universities in India has grown notably over the last 70 years and it has 945 universities and about 40000 faculties in 2020. As per the UGC document, out of 86% of students finishing graduation hardly 12% go to submit graduate schooling and barely 1% stake in studies. Even though India is having one of the most important higher schooling mechanisms within the international English medium universities, it can't earn global difference due to faulty education machines, scarcity of accurate faculty and shortage of other infrastructural facilities.

   Universities in India are generally public-funded except for some non-public universities. As such funding continues to be a major constraint and due to this, universities can't have extremely-present day infrastructural facilities for teaching and studies. Neither it can attract a proficient workforce nor can have world-class Colleges/ Universities. No Indian college/organization is figured within the pinnacle of two hundred world college ranking released in 2020.

Indian better schooling is a long way in line with the global requirements. At this crucial juncture, the NEP-2020 indicates to have expenditure on training area at the rate of 6% of the GDP as in opposition to 3% earlier, is sincerely an ambitious initiative and a welcome flow.

2. **Extra attention on vocational studies and skill training even at faculty stage:**

   As professional workforce is required for the maximum productivity of vital human capital development of a country, both vocational education and skill development are known as drivers for growing productivity of individuals, profitability of employers and finally countrywide increase. According to Indian Labour file, in India best four percentage of the young labour force gets formal vocational training and six percentage inside the casual zone.

   While South Korea has provided as excessive as 96 %, Canada, Japan 80% & Germany 75%, United Kingdom 68% and Mexico 24 % vocational and skill education to the younger people before becoming a member of any gainful employment. By 2025, India envisions that at least 50% of the freshmen, through the college and college system, must have exposure to vocational training.

   Skill abilities of the humans will help us to keep greater competitive edge and help us develop as a nation. Propagating vocational training with unique popularity will make our youths more employable and create them opportunities for self-employment too. Now, this NEP-2020 has furnished a possibility to the newcomers for ability development in a vocational challenge as multidisciplinary examine alongside the general education from high school (class 8) onwards.

3. **Choice of entry and exit at multiple levels (UG level):**

   The undergraduate degree path shall be of three or four years multi-disciplinary and there will be no water-tight compartment

inside the preference of the streams of observation, in addition, the scholars can have a choice between major and minor electives underneath the selection, based totally on credit score machine from across a wide range of subjects. Creation of four years degree direction is a welcoming step as the course may be at par with the first diploma level course in diverse foreign universities like that of America.

Researches are wanted for the blessings of the society and new knowledge advent. However, the gross enrolment ratio in better schooling, the number of students joining the first diploma route after 12th Std. (i.e. 18-23 years) is considered to be one of the essential indicators for becoming an evolved kingdom.

India with 26.3% higher education Gross Enrolment Ratio (GER) nowadays, is focused on to reap 50% GER through 2035. Some countries have already bettered GER which include USA-88%; Germany 70%, Canada-69%, South Korea -94%; China-51%, Iran-70% and Malaysia-45% and many others. On this new coverage, there will be alternatives for more than one access and go out at the same time as present process the undergraduate route. Which means, certificates and degree will be provided after crowning glory of first, second and third year of the route respectively. This flexibility has made suitable motivation to the students to pursue the route and complete it easily without the problems of dropouts. Further, the identical time, the GER in tertiary schooling shall additionally be progressed. Such that one entry and one exit alternatives are quite suitable for vocational research too, as they have got various task roles at distinctive stages of the route enhancing, providing the avenues for employability at a couple of stages.

4. **Restructuring of the education system:**

Within the present college training, Anganwadi/pre-faculty, the early life care and education) is not covered within the ambit of

formal schooling. therefore, the present 10+2 device (6-18 years of age) has been restructured into 5+3+3+4 machine (three-18 years) encompassing 3 years of pre-college stage and Std.1-2 as a part of the foundation level. Class three to five is for Preparatory, Class 6-8 is middle and class 9-12 as Secondary degree.

Mid-day food and the breakfast centers will be prolonged to the ECCE segment too. Multi-disciplinary streams of observation along with vocational publications are to be added inside the secondary degree and it will virtually give enough scope for choices of topics to the students for nurturing their creative capabilities.

Internships and experiential studying possibilities would be provided inside the curriculum that will deliver a turn in harnessing the vital wondering, creativity and innovativeness of the newcomers. Examination reforms will be introduced in laying weightages now, not on the rote gaining knowledge, however on the practical utility of know-how as part of holistic development of the learners.

5. **Advent of four years incorporated B.Ed. diploma:**

The quality of teachers and teaching is crucial and closely related to learning outcomes and gaining knowledge. As such, B.Ed. the diploma has been made obligatory for opting for teaching as a profession inside the school degree in any of the tiers. In addition, B.Ed. degree course has to be added in a multi-disciplinary group emphasizing one-of-a-kind pedagogic publicity like experiential mastering, trouble solving. The policy notably covers the various provisions for the B.Ed. path and trainer and promises advanced schooling facilities to be provided for generating better-qualified teachers.

6. **Countrywide testing organisation for entrance examinations:**

There will be a countrywide test for admission into the undergraduate courses within the Indian Universities to be held

two times in a year. Here the candidates can have the possibility of looking for admission to various universities/faculties without incurring a good deal of cost. Such initiative surely shall beautify the diversity of the students admitted to a college and shall provide an experience of country-wide integration among the young minds of the nation.

7. **Campuses of Indian Universities in overseas countries:**

The excessively performing Indian universities can be endorsed to set up campuses in foreign countries. Further, deciding on overseas universities from most of the top hundred global ratings shall also be facilitated to perform in India. That manner, it encourages healthy competition amongst the colleges in India and it paves the manner to come to be globally similar institutions.

Collaborations at the national and global level shall deliver excellence in studies in higher learning, getting to know and subsequently, Indian universities are to be advocated for a collaborative challenge among the universities inside India and overseas. Finally, Indians now shall be getting international level high-quality schooling at a less expensive cost.

For that reason, Indian authorities shall formulate stringent policies and regulations for better quality, economic feasibility and average test and balances at the operation of overseas universities on Indian soil. Necessary rules will be formulated inside the framework of NEP-2020.

8. **The three language formula for school education:**

Mother tongue or local language shall be the medium of teaching up to class 5. In that way, getting to know the students will become quicker and it will offer avenues to familiarize students with the cultural diversities of the nation, thereby emphasizing Indian languages that shall remain relevant and vibrant.

All of the languages are intently connected with the humanities and culture of the speaking community and as such, NEP-2020 spells various activities for maintaining the zone of arts and tradition related to the languages. It's far a possibility for the right renovation of the endangered languages too.

9. **Merchandising India as an international educational Hub:**

Internationalization of Indian schooling is a critical schedule in NEP-2020. Its objective is to sell India as an international hub for top-rate training at a low-priced cost. Every university/group hosting overseas college students shall install an international college and student's office to facilitate the overseas students. Such initiatives shall widen the horizon of visions within the instructional management for international benchmarking.

Each institution must try to broaden certain regions of competence for having a look at and to attract overseas students and in turn, the college shall have a greater diversity of the scholar enrolment developing a very good atmosphere for better knowledge gaining.

10. **Higher education in India - Transformation of its regulatory system:**

The establishment of a single regulatory body called the Higher Education Commission of India (HECI) overhauling UGC, AICTE, NCTE and many others barring the scientific and regulation is a massive transformation in a regulatory tool for better education. There shall be four unbiased verticals to be functioning under this umbrella. Unique awareness is likewise given to decrease the commercialization of education through formulating more than one mechanism with tests and balances. There shall now not be more than one regulatory body for courses in higher educational institutions.

Relevant Areas of Focus

There are other guidelines which include established order of National Studies Foundation and a Country-Wide Committee for Integration of Vocational education for the vocational and conventional know-how advanced in India. The coverage speaks about the opposite areas of recognition which includes adult education and lifetime gaining knowledge, use of ICTs and advertising of Indian languages, arts and tradition.

By the end of 2040, all higher instructional institutions in India will be converted right into multi-disciplinary establishments with a large variety of student enrolment which includes the expert and different technical universities. It additionally opines the requirement of collaboration among enterprises and better educational institutions to steer innovation and studies in the respective fields and additionally to enhance the employability of the freshmen.

McKinsey Global Institute survey outcomes state "India produces approximately 360,000 engineering graduates and 600,000 graduates in arts/technology/commerce in a year." And the best 25 percentage of engineering graduates and 10 percent of other graduates are easily employable. In our country, several fresh graduates only a few with no trouble are employable even many of the engineering graduates and many of them aren't employable because of a lack of a certain skill set. To address this issue, Vocational education has been given due importance in NEP-2020, wherein ability and capacity development are to be focused and included inside the curriculum.

It's quite pertinent within the state of Manipur too, to have a critical concept for Manipur to have a sturdy training device within the framework of NEP-2020 and for the country to grow to be the actual educational gateway of India to South East Asian nations within the years in the light of India's Act East Policy.

For that count, the universities inside the country are to reorient the mindset for the global benchmark by the way of strengthening the present

publications and also supplying more modern and emerging disciplines, revamping the infrastructural centers, curriculum and pedagogy, keeping with the brand-new policy so that the colleges may be capable of appealing to the students from home and foreign both.

The fulfillment of any coverage framework could be adequately depending on the powerful implementation of the suggestions. It isn't always denying the fact that gratifying teaching is one of the most important elements for producing correct first-class college students. Besides excellent infrastructure and curriculum, true academicians are of utmost importance for providing first-rate education with the use of current pedagogy.

Every other component, the availability of ready and skilled faculty contributors for the various courses continues to be an exquisite assignment in many institutions to better gain knowledge in India. We've got such a lot of inherent demanding situations in each activity, but, we should strive for attaining the purpose, of a robust and vibrant India.

Concluding Comments

Learning and Education is a continuous procedure, thus, non-stop improvement and training is what goes on through. Educational innovation with more variety in expertise and talents ought to be harnessed and at the equal time, the mindset and conduct of the scholars must be taken under consideration, as an offering for the holistic development of the novices.

Facing competition in the present scenario is becoming an inevitable task, in this light, Indian universities need to focus on quality in their management of affairs and also benchmark with the high-ranking institutions of the world only then we may be able to come up to the global standards. At the same time, more autonomy should be provided for fairer competition and flexibility in their work. India is poised to have a vibrant financial system pushed with the aid of expertise and is ready to meet the demanding situations in training. Most important however, is to be comparable in other global areas too.

Educational reforms are needed in terms of curriculum, pedagogy, assessment, teaching-learning system, governance and management with a revolutionary mindset that are very much the want of the hour. If we are to transform our education system into real know-how energy and recognize a future of prosperity and boom, a radical exchange of the training system with pleasant exchange of ideas with other nations is very important inside the light of global developments going on.

It's far believed that this NEP-2020, shall pave a brand new vista for transforming India into a real global know-how superpower in the following years, a concerted effort is though made with the aid of all of the stakeholders with honest dedication and conviction.

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– Part 2 –

Understanding the Policy Document

Chapter 3

Transforming Education Through Digitization & ICT Optimization

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1. Introduction

Education is described as the process of knowledge acquisition that helps an individual to learn something new and to acquire different technical skills. Through education, we learn how to find solutions to critical problems. In other words, Education is the method of developing new information and ideas to apply them to one's daily life. It can be earned through real-life experiences outside of the classroom as well as knowledge gained from books. Education is the major thing to access the world in India's continued development leadership, in aspects of the economy, social equity, advancement of science, preservation of national integrity, and cultural diversity. The ideal method for nurturing and optimising these many abilities and capabilities in our nation is though providing high-quality education. (Development 2020)

We have often witnessed, futuristic education is technology-driven. Examples are the pandemic crisis and the fear of being fully locked in. The epidemic completely transformed the educational system, moving it from traditional classroom instruction to online instruction with new restrictions. In both urban and rural India, a comprehensive framework for elementary education, higher education, and career training is thus provided by NEP 2020 (National Education Policy 2020) that envisions to transcend the traditional and rote learning and builds on new transformation channels such as ICT that would make India a centre of knowledge Hub.

On July 29, 2020, The Indian Government published a policy document National Educational Policy (NEP). There the government outlines its goals for India's education system during the subsequent ten years. This policy was created through comprehensive consultations with a diverse group of stakeholders, including educators, parents, students, students' parents,

civil society groups, and scholars in education. NEP is a strategic framework that addresses all areas of education, from primary and secondary schooling through higher education and professional (vocational) training. It is an ambitious policy that seeks to modernize and elevate India's educational system to a global standard.

By 2021, the strategy will focus on upgrading India's educational system. The policy makes various guidelines for encouraging digital learning and upgrading infrastructure needs. The NEP 2020 places a strong emphasis on the benefits of technology and preparing the next generation to handle a variety of difficulties. A focus should be placed on the accessibility of online education and training to everyone for the society's advancement and knowledge enhancement since India is a nation with a social economic dimension and regional diversity.

The area of knowledge is developing rapidly on a global scale. Many low-skilled jobs could be replaced by machines due to the development of science and technology such as the rise of big data, deep learning, and intelligent systems. As a result, there will be a growing demand for skilled employees with specialized knowledge in math, computer engineering, and data science as well as cross-disciplinary abilities in the natural and social sciences as well as the humanities. The way we meet the needs of the world for energy, water, meals, and sanitation will significantly change as a result of climate change, rising pollution, and the depletion of natural resources. This will once again lead to a need for new skilled workers, particularly in the fields of biological sciences, chemistry, physics, agriculture, environmental sciences, and social science. The frequent occurrence of pandemics and epidemics would facilitate joint research in managing infectious diseases and vaccine development, and the resulting socioeconomic difficulties will increase the need for interdisciplinary education. As India grows closer to being a developed nation and one of the three greatest economies in the world, there will be a huge requirement for humanities and the arts specialists. Therefore, children must be encouraged to not only study technical subjects, but arts also thereby focusing on essentials of education.

They would learn how to learn, given the rapidly changing nature of the job market and the global environment.

Therefore, the focus of education must shift away from studying factual information` towards how to think critically, solve issues, be innovative and interdisciplinary and take new ideas in emerging and evolving disciplines. Education needs to become more immersive, comprehensive, integrated, learner-centered, inquiry-driven, discovery-oriented, discussion-based, adaptable, and, of course, entertaining. In addition to both science and mathematics, the curriculum must also cover the fundamentals of the humanities, games, sports, wellness, language groups, literary works, culture, and values to help students grow in all facets of their learning and to broaden their understanding of the world and their own cultures. To prepare students for a gainful, satisfying job, learning must help students develop their character and help them become moral, logical, empathetic, and supportive.

In India, the conventional techniques of teaching and learning have been replaced by more modern ones as a result of technology. As a result, many universities, colleges, and other higher education institutions have gone through a major transition in the education sector. One of the main factors altering the education industry is the widespread use of the internet. According to the latest study, India would have more than 55% of its population online by the end of 2025, trying to make the government's prime importance the modernization of education.

The new national education framework recognizes the specific requirements of each student. It tries to make an excellent education available to them. A more flexible and adaptive education system that can serve both the requirements of learners and the economy is another goal of the strategy. One of the key aspects of the New Education Policy is focus on vocational education.

2. Objectives of ICT Education Policy

The definition of the word "digitization" has developed as an outcome of evolution and adaptation, and it now incorporates a better and wider area.

In the previous ten years, many initiatives were taken and implemented with innovative techniques as a result of a significant increase in digitization in the education industry. As a result, there have been several important changes in the education field on a global scale. Therefore, this modification is being actively adopted in India by schools, institutions, and businesses (Smrita, Assistant, and Bengal 2021). By placing a strong emphasis on high-quality education, the state and national governments are also working together to improve both students and society. This new National Education Policy (NEP) is thus prioritizing the digitization in addition to the use of technology in the education sector. Additionally, it emphasises ed-tech strategies that improve rural education also.

The main objectives of the ICT education policy are:-

- To build an ICT-literate community
- To provide ICT-enabled tools and materials to all students and instructors in a universal, equal, open, and free manner.
- Encourage and support a wider range of societal participation in enhancing the educational process through effective ICT use.

3. A Review of ICT in Education

In terms of school education, the government has been able to significantly improve student and teacher access to and familiarity with ICT over time through several programmes. *One Nation, One Digital Platform* is how the Digital Infrastructure for Knowledge Sharing (DIKSHA) is envisioned in terms of e-content. All e-content related to school education will be accessible from this single site. E-pathshala, NROER, and comparable other e-content and digitised textbook hosting portals are being connected with DIKSHA. Some States, like Tamil Nadu, Andhra Pradesh, Uttar Pradesh, and Maharashtra, are already actively participating in the creation of electronic material and its submission to DIKSHA. The platform has thus far been utilized as an addition to formal schooling and as a teaching and learning tool for both teachers and students. DIKSHA has changed to become the primary platform for learning and educating from home due

to the pandemic's effects on school education. Due to DIKSHA's extremely scalable and adaptable infrastructure capabilities, this adjustment was made possible. NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement), a capacity-building programme for "Improving Quality of School Education via Integrated Teacher Training," is also using DIKSHA to host training modules for the nation's 42 lakh teachers. It aims to develop elementary school principals' and all teachers' competencies. Each State and Central Institution (CBSE, NCERT, NIOS) is free to set its own curriculum parameters and provide materials in its own native tongue.

Teachers who are tech savvy from every state are the main contributors to digital content tailored to the demands of their particular curriculum. As an additional tool, different states have thus far exploited DIKSHA's ability to deliver courses for the training of teachers. Using the training infrastructure provided by DIKSHA, 15 states have started preparing for online teacher training. Ahead of the schedule, the states of Uttar Pradesh, Jharkhand, Madhya Pradesh, CBSE, and Chandigarh are preparing to offer teachers entirely online training. Because the platform has a core infrastructure for decentralized choice and use, it will be possible for DIKSHA to evolve into **One India, One Platform.** Both apps and a browser are available. It is based on sophisticated technology that was created in India and developed with Indian needs in mind. This technology uses the most recent developments in the internet and AI/ML technologies, as well as telemetry to record precise usage information. Because of the scalability of the platform, tools including two-way video and audio interfaces for conducting online assessments and classes will be possible. The platform can fully utilise open AI/ML technologies due to its rich data architecture, which includes machine-readable telemetry, graph-based taxonomies and content models, and massively scalable, unstructured information storage. The platform makes use of a highly scalable data pipeline to enable the execution of batch-oriented and streaming data analyses. Tensorflow and other open-source platforms are integrated into the platform to execute supervised and unsupervised learning, neural networks, predictions, machine transactions for Indian languages, video/text translations, and other tasks.

4. Recommendations from NEP

New initiatives are needed in light of new conditions and realities. Due to the rise in diseases and pandemics, we must be ready with high-quality alternative methods of learning wherever and whenever traditional and in-person forms of education are not available. The National Education Policy 2020 acknowledges the significance of utilising technology's benefits while also admitting its possible risks in this area. To ascertain how the advantages of online/digital education might be enjoyed while addressing or minimizing the drawbacks, it asks for well-planned and appropriately scaled preliminary studies. To meet the present and future challenges of providing high-quality education for everyone, it is necessary to maximize and expand the already-existing digital platforms and ongoing ICT-based educational efforts. NEP Paragraph 24.1

- However, the benefits of online and digital education cannot be completely realized unless the digital divide is reduced via collective effort, including the Digital India campaign and the availability of reasonably cost computing equipment. To effectively tackle concerns about equity, technology must be used in online and digital education. (NEP Paragraph 24.2)
- For teachers to be good online educators, they must have the proper training and growth. An excellent teacher in a traditional classroom would not always make a good teacher in an online medium. Along with pedagogical adjustments, a new strategy is needed for online tests. There are several challenges involved in expanding the usage of online tests, including limitations on the types of questions that can be asked in an online environment, managing network and power interruptions, and preventing unethical behaviour. The online/digital education arena has restrictions for some course/subject kinds, such as performing arts and scientific 237 practicals, which can be somewhat solved with creative approaches. Unless experience-based learning is incorporated, online education will also have to become screen-

based learning with very little focus on the social, psychological, and psychomotor elements of learning. NEP Paragraph 24.3

5. Comparison with Existing Academic Structure and New Academic Structure

	Existing Academic Structure	New Academic Structure
Streams	There are three streams which students can choose from: Science Commerce Arts	No hard separation of streams. A student can choose his stream according to his/her interest or desire
Pedagogical Structure	10+2+3	5+3+3+4
Board Exams	Based on memorizing of facts that are held once a year	Based on core competencies that allow students to take the exam twice
Award of Degree	After completion of 3 or 4 years, the degree is provided to the students	Multiple exit options with certificate after 1 year and diploma after 2 years
Vocational Education	Nil	Vocational Education from 6th class onwards
Marksheet Scoring	Based on marks obtained in exams	360 degree performance evaluation
Entrance Test	Multiple Entrance Test	Single Entrance Test

Table 3.1: Comparison with Existing Academic Structure and New Academic Structure

6. ICT Resulted in a Transformation in Education

Today, Teachers play the roles of learning facilitators, collaborators, coaches, knowledge navigators, and co-learners in addition to knowledge transmitters and primary information providers. In addition to controlling and directing all elements of learning, teachers increasingly give students more choices and responsibility for their own learning.

The National Council of Educational Research & Training, India (NCERT), the Department of Electronics (DoE), and the Ministry of Human Resource Development (MHRD) introduced the Computer Literacy and Studies (CLASS) programme in 1984. To spread the information and technological skills, 2500 schools received microcomputers and 42 resource centers were set up.

"Class 2000" in 1993:- The Computer Literacy Programme was introduced in 10,000 schools, the Computer Aided Learning (CAL) Program in 1,000 schools, and the Computer Based Programs in 100 schools. To increase access, quality, and efficiency in the educational system, the National Policy of Information and Communication Technologies School Education, 2012 sought to design, catalyse, support, and ICT related activities and processes.

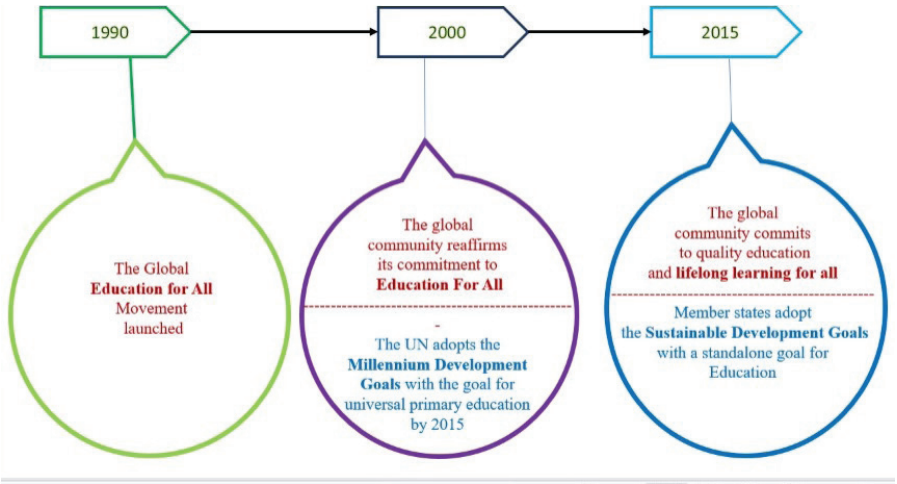

Fig. 3.1: Global Education Agenda 2030

7. Transform India into a Digitally Empowered Society and Knowledge Economy

The purpose of the ICT policy for education is to educate young people to contribute creatively to the creation, maintenance, and expansion of a knowledge society that will result in the overall social-economic development of the country and increased worldwide competitiveness.

In 2015, only Digital India was launched so it was transforming India into a digitally empowered society and knowledge economy that has three main things. Digital India is a larger umbrella if we fuel digital India then probably we can have or we can achieve what we want to achieve on terms of digital education incorporation of digital education in India and So there are three main vision area of digital India.

1. Digital Infrastructure as a Core Utility to Every Citizen
2. Governance and services on demand
3. Digital Empowerment of Citizens

Fig. 3.2: Vision Area of Digital India

The first two visions areas can work towards achieving the goals which we lay down for digital education

The major things which are enclosed in the first two visions are:

- Availability of high-speed internet as a core utility
- Digital Identity that is unique, lifelong, online and authenticated - digital citizenship
- Safe and secure cyber-space
- Universal digital literacy
- Universal accessible digital resources
- Availability of digital resources /services in Indian Languages
- Collaborative digital platform

8. Improvement of ICT Competencies and Literacy

The definition of ICT literacy in the policy is based on degrees of proficiency. According to the academic stage in which a learner or lecturer is, that determine that level to which they should be introduce to ICT. These levels are merely suggestions, thus modifications must be made to fit regional circumstances. To stay up with evolving technology, these

levels must also be updated regularly. However, the advantages of online and digital education cannot be fully realised only if the digital divide is closed through the Digital India campaign and equally widespread access to affordable computing equipment.

Preliminary studies for online education: The NETF, CIET, NIOS, IGNOU, IITs, NITs, and other appropriate organisations will be chosen to conduct several preliminary studies concurrently to assess the advantages of combining traditional education with online education while minimising the drawbacks, as well as to research related topics like student device addiction, the most popular e-content formats, etc. The outcomes of these initiatives will be made available to the public and applied to ongoing improvement.

Working with Digital Divide: To meet the diverse demands of the student population, the policy that was implemented to address the digital divide stated that educational programmes would be provided 24/7 in many languages.

Online Learning Platform and technologies: It will be integrated into appropriate already-existing e-learning platforms like SWAYAM and DIKSHA to give teachers an organized, user-friendly, and comprehensive set of tools for tracking students' progress. Given the current pandemic, tools like two-way video and two-way audio interfaces are particularly essential for teaching online classes.

Concept development, dissemination, and digital storage: A clear public rating system will be constructed for users to rate the effectiveness and quality of a digital repository of content that will include the creation of coursework, educational games and simulations, augmented reality, and virtual reality. We'll also create user-friendly educational tools for students, such as applications and gamification of Indian art and culture, in a variety of languages with simple instructions. We'll give learners a reliable and consistent backup method for accessing e-content.

Virtual Labs: All students will have equitable access to high-quality practical and hands-on experiment-based learning experiences due to the use of already-existing e-learning platforms like DIKSHA, SWAYAM, and SWAYAM PRABHA. It will be studied and explored whether it is possible to give students and teachers enough access through appropriate digital devices, like smartphones with preloaded content.

Online examinations and evaluations: Government authorities, including the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other recognised agencies, would create and implement assessment frameworks that include the design of competencies, portfolios, rubrics, standardised assessments, and assessment analytics. 21st-century skills will be the focus of studies to test out novel evaluation methods using educational technologies.

Blended learning models: The value of face-to-face in-person learning is fully appreciated while encouraging digital education and learning. As a result, different blended learning models will be identified and appropriately replicated for diverse topic areas.

9. Main Issues of NEP 2020 Handling with Technology

Primary School Education

a. Using technology as a tool for educators, removing linguistic barriers between educators and students, developing digital libraries, and giving wider access to education, particularly for children with disabilities.
b. Coding will be covered in the education curriculum as a crucial skill for kids to learn.
c. For online teacher training and teacher education, technology can be used effectively.

Academic & Professionals Education

a. Technology to be integrated into legal and medical professional education.

b. Technology has been recommended as a means to achieve 100% literacy. This requires the creation of excellent technology-based learning choices.
c. Recognising the value of technology in tackling many societal concerns and in fostering multidisciplinary research and innovation. In addition, establishing a National Research Foundation has been proposed as a means of developing a research culture, and HEIs (higher education institutions) have already been urged to establish start-up incubators and centers for technical development.
d. The National Educational Technology Forum (NETF) is being established to act as a forum for the free exchange of ideas on utilising technology to improve instruction, evaluation, and administration.

Education Administration

a. The Academic Bank of Credit, which will be developed, will be used to hold academic credits obtained from various HEIs online. Degrees can be awarded using these credits accumulated over time.
b. Give more emphasis on utilising technology to enhance the effectiveness and transparency of governing organisations like the State School Standards Authority and the Higher Education Commission of India and its four verticals (National Higher Education Regulatory Council, National Accreditation Council, Higher Education Grants Council and the General Education Council).

Adapting to Intelligent Machines (Artificial Intelligence)

a. The policy highlights the need to adapt advances brought about by the utilisation of Artificial Intelligence across businesses after identifying the challenges caused by its overuse.
b. The NETF will classify new technologies into different categories based on their potential for disruption and expected

timeframe. The Education Ministry will formally identify the pertinent technology after receiving a regular report from it.

c. NEP 2020 Policy is playing a leading role in identifying the need to raise awareness and carry out the study on several aspects of the new disruptive technologies, including issues about data handling and security.

10. Using and Integrating Technology

a. NEP Para23.1-23.13(TASK 265):- The CIET at NCERT will be improved to serve as the main focus for advancing, growing, and promoting all activities relevant to educational technology for the school-education sector. Beginning in 2021–2022, more personnel and other resources will be developed and made available following the needs. The CIET will develop into a key hub for educational technology.

b. NEP Para23.1-23.13(TASK 266):- A similar exercise will be conducted by States and UTs in SCERTs for the SIETs, and they will create a plan to strengthen the SIETs. It will develop into the main centre for educational technology in States and UTs.

c. NEP Para23.1-23.13(TASK 267):- The National Digital Library would be connected to the e-resources of NCERT and SCERTs to make the best use of the content that is already accessible.

d. NEP Para23.1-23.13(TASK 268):- The ICT programme under Samagro Shiksha would be improved, providing states more freedom in the kind of technology they can use and the ability to support their schools differently depending on the number of students enrolled.

e. NEP Para23.1-23.13(TASK 269):- DoSEL will strengthen and improve UDISE even further by adding parameters for the district- and school-level performance evaluation indices.

f. NEP Para23.1-23.13(TASK 270):- To create a comprehensive digital infrastructure for education, DoSEL will collaborate with MEITy. This task will be started by DoSEL on priority.

Conclusion

Education experts, philosophers, thinkers, and academicians have used quality in education in a variety of contexts. So, in addition to taking students' learning outcomes into account, the quality of the inputs and procedures used to produce better learning outcomes is also very important. Additionally, a full understanding of the education situation in the modern era is required to make relevant decisions and raise educational standards. India is a nation with enormous potential for its people resources, but it is urgent to figure out how to make use of this potential. Opportunities are present; the issue is how to take use of them and make them available to others. This chapter, therefore focused on all those opportunities that have power to transform the quality of education through digitizing the education system and using the ICT tool for effective learning and teaching engagement.

Increasing the number of institutions that provide the quality of Indian higher education is essential for maintaining the rate of growth. Reviewing should have been done on the funds, gender equity, standards of quality, relevance, infrastructure, and finally responsiveness to achieve the desired objective of improving the education of high quality. The National Education Policy 2020 thus emphasizes the technology that plays in advancing teaching and learning. There are major issues and challenges also that need immediate solution. Large-scale online exam administering is difficult for several reasons, including limitations on the types of questions being asked, handling network problems and power failures, and preventing illegal practices. Some course/subject types, like performing arts and practical science departments, have limitations in the online learning mode that may be partially resolved with inventive solutions. It is need of the hour that best of the practices must be adapted by educators to facilitate overall teaching and learning education ensuring the quality, thereby ensuring optimization of full potential, not only of the tools and technologies, but of each individual.

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Chapter 4

Assessment As a Policy Tool in National Education Policy 2020

Dr. Nitin Sankar Pillai
Dr. Mamta Nitin Pillai

Dr. Nitin Sankar Pillai

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Introduction

National Education Policy 2020 was approved by the Union Cabinet, chaired by Prime Minister Narendra Modi on 29th July 2020. It is based on the Draft National Education Policy of 2019, proposed by the Committee for Draft National Education Policy under the leadership of Dr. K. Kasturirangan on 15th December 2018. The policy was received immediately by all stakeholders including schools and higher education institutes of India for the progressive thoughts it promoted while championing the cause of traditional and cultural values. Additionally, it aligned itself to Sustainable Development Goal 4 which promotes equitable education for all. Although research and deliberations have focused on many aspects presented in the National Education Policy 2020, one of the educational domains that have not been represented well is that of assessment and its role in a policy document.

Assessment, as an educational philosophy, can be used as a policy framing tool as it renders its importance in all aspects of learning and teaching. Large-scale education reforms can only be measured and evaluated for their effectiveness based on the results derived from student performance and by ascribing accountability for the same across the stakeholder board (Hamilton 2003, 25). The present chapter investigates the presence of assessment practices in the policy document and aims to verify if they align with what a policy should be. It also examines the changes suggested in NEP 2020 with regards to assessment in schools, assessment in higher education and institutional capacity building for assessment in India.

Defining Policy

The term 'policy' takes on varied meanings based on the context it springs from. For an individual, it might merely limit to ethical practices that she/he applies to professional and personal interaction, on the other hand in the private sector policy-related activities might be largely motivated by profits and how to achieve them. However 'policy' is burdened with multiple rationales when it is applied to public causes, such as education. Policy, in

the public sector, should be characterized by principles of equality and mass well-being rather than fencing it to just ethical conundrums or profitability. Thus, any policy developed for the public sector must be able to take into consideration all the stakeholders, their needs, the aspirations and then suggest methods to fulfill these. Educational policies can achieve this by employing effective curriculum design, adept pedagogical implementation, effective teacher training, rational assessment strategies and agile feedback mechanisms. Thus educational policies in the public sector can be said to have two primary functions: to reflect the cultural norms which are considered important by the state and secondly; to institute a mechanism of accountability that can be measured against student and teacher performance (Taylor et al 1997, 3).

To understand how policies impact sectors such as education, and in turn, the stakeholders related to it, it would be prudent to establish what is meant by 'policy'. The policy can be understood as, "the implicit or explicit specification of courses of purposive action being followed or to be followed in dealing with a recognized problem or matter of concern, and directed towards the accomplishment of some intended or desired set of goals. The policy also can be thought of as a position or stance developed in response to a problem or issue of conflict, and directed towards a particular objective." (Harman 1984, 13)

This claims that a policy would work towards solving an established problem or cause of concern by stating specific and targeted methods for solution. Additionally, it would also set goals and present a roadmap on how to achieve these. This definition of policy conforms to the idea of education as the role of education is to better itself with time. Education must be able to reflect the changes happening in the cultural and economic context of which it is a part and anticipate challenges that might occur. It should also be able to anticipate the challenges and find solutions, beforehand to be relevant and contribute to the growth of all stakeholders. Thus an educational policy should, as per the definition, predict challenges, suggest solutions and set goals for holistic development. India's first 21st-century

education policy emulates the same notions about assessment. In general any policy, specifically, an educational policy will

a. Be more than just a text
b. Be multi-dimensional
c. Be value-laden
d. Exists in context
e. Is a state-activity
f. Interacts with policies in other fields
g. Never be straightforward in implementation
h. Will result in unintended as well as intended consequences

While analyzing the role of assessment in National Educational Policy 2022, these aspects must be recognized, as these notions will influence how the policy and its promises attain fulfillment in the future.

National Education Policy 2020

The National Education Policy of 2020 introduced by the Government of India, comes after a gap of more than two decades. The previous policy was a result of the commission set up under the chairmanship of Acharaya Ramamurti in 1990. The mantle was then passed to N.Janadhana Reddy where the Central Advisory Board of Education was set up and the National Programme of Action was proposed in 1992. This policy stressed on promotion of development and strengthening national integration. It emphasized transforming the Indian education system, with stress on quality enhancement, developing moral values and reducing the chasm between education and life. National Education Policy 2020 (NEP from here on), is the first policy of its kind in the 21st century and appropriately reflects the same.

NEP makes promising declarations regarding the state of education and its utility for the country. The introduction articulates how education must have universal accessibility by which an equitable and just society can be formed for India's development in economic, social, and scientific domains

while also maintaining national integration and preserving culture. The document also clearly exerts the need to align the path of Indian education with that of Social Development Goal Number 4 as per the 2030 Agenda for Sustainable Development which seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". It also asserts the need to take significant reforms, ranging from school to higher education to ensure excellence, equality and integrity both in the system and its implementation.

To summarize the policy document, would be difficult, given the scale of suggestions presented. However, NEP gives 22 fundamental principles that should guide the education system and individual institutions. These are:

1. Recognizing, identifying and fostering the unique capabilities of each student
2. Achieving Foundational Literacy and Numeracy for all students by Grade 3
3. Flexibility to choose learning trajectories & programmes
4. No hard separation between arts, sciences and vocational specialization
5. Multidisciplinary & holistic education across specialization
6. Strengthening conceptual understanding
7. Encouraging creativity & critical thinking
8. Upholding ethics, human and constitutional values
9. Promoting multilingualism and local languages
10. Emphasis on life skills
11. Focus on continuous formative assessment
12. Increased utilization of technology
13. Diversity and local contexts to be honored
14. Absolute equity and inclusion
15. Harmonized curriculum from school to higher education
16. Enterprising teachers at the core
17. Regulatory framework to allow empowerment
18. Quality research
19. Persistent review and monitoring

20. Pride in the nation
21. Education as a public service
22. Investment in strengthening the public education system

All domains of education are covered, with the needs of all stakeholders in mind. However, a closer look at these fundamental principles would show us that some of these are more important as they impact the educational journey largely. For example, the concept of promoting creativity and critical thinking is directly tied with the way formative assessment for learning would be employed. Within the Indian educational system, assessment plays a large role both as a gate-keeping function and also as a marker of how successful education has been. The role of assessment, in such a situation, cannot be relegated to an afterthought in the educational journey and must be given due importance. Even if we circle back to the first principle of recognizing, identifying and fostering the unique capabilities of each student it would be based on some or the other form of assessment, either formal or informal, which reiterates the need for robust assessment systems as part of any educational policy. Additionally, improvements can only happen when some form of results are obtained which can be further fine-tuned through effective integration and research which again requires equal methods of assessment to give the same kind of result.

Thus assessment strategies, as part of any educational policy, cannot be undermined or neglected. National Education Policy 2020 duly notes this and recommends the use of assessment within the current framework and proposes modifications which will be discussed in the upcoming sections.

Formative & Summative Assessment

These two terms are frequently encountered in any educational policy and play a pivotal role in defining the course of the educational journey. Essentially formative & summative assessments are viewpoints of evaluation based on the function that they fulfill. Formative assessment, in the truest form, would be the collection of activities that are carried out while the students are in the developmental stage. These sets of assessments are aimed

at capturing the "progress" of the students as they formulate their learning. However, this can only happen if the teacher's delivery is aligned with the internalization of feedback offered. Formative assessment works only if there are mechanisms in place where teachers can give students feedback, at appropriate junctures, about what can be improved in their learning and students are then able to incorporate this into further learning.

Summative assessment differs in function because it tries to evaluate how much the students have learnt towards the end of a course, unit, or module. Learning objectives are kept as a milestone at the beginning of the course and a summative assessment would verify how much progress has been realized based on this milestone. Generally, summative assessment calls for a 'one-time' effort as they muster maximum performance during this and may not necessarily remember what they have learned once the assessment is over. Traditionally summative assessments are fewer in number, reducing the chances of students to better their performance, thus a lot of anxiety and stress creep into the summative assessment. This may lead to rote learning and proliferation of coaching culture which the current education policy attempts to remove.

Assessment in Schools

One of the first and foremost insistences from the assessment domain that can be noticed in NEP 2020 is related to the curriculum. The policy document makes it clear that there will be more emphasis on foundational literary and numeracy along with reading, writing, speaking, counting, arithmetic, and mathematical thinking in the preparatory and middle school curriculum. This will be ably supported by formative/adaptive assessment practices to record and consequently individualize each student's learning. Secondly, the document also affirms the use of experiential hands-on learning. To achieve this, it promotes rethinking assessment, not merely as assessment "of" learning but also viewing it as "for" and "of" learning. This view must necessarily echo the learning outcomes for each of the subjects. This proposition is intended to move the educational system away from

rote learning, which has led to the proliferation of the coaching culture that plagues students today.

The policy document also devotes a full section, titled Transforming Assessment for Student Development, to this 66-page manuscript. This section covers all the aspects of assessment that must be kept in mind both at a national level and also at the institutional level. The key points from this section are as follows:

1. Shift in Focus

The policy document makes it clear that assessment should be aimed at shifting the culture of the schooling system from summative tests to more formative modes. This means that tests that primarily required students to engage in rote learning and memorization must be replaced with more organic methods of assessment where concepts of analysis, critical thinking and conceptual clarity would be of paramount importance. In doing so, the policy proposes a movement from static testing to a more assessment-based educational strategy. This would also assist in tapping into higher-order thinking skills and aid the betterment of learning as a natural mechanism. It would also assist better learning for the teachers and policymakers as they would be in a better position to understand how learning happens for the students, to make the process better.

2. Uniform Progress Cards

One of the pieces of evidence generally accepted as the measure of learning attained by a student is the progress card given to them by their schools. The policy document addresses the issue of disparity in the format of progress cards by proposing a centralized method. As per the policy, progress cards for all school-based assessments will need to be redesigned by the individual states/union territories under the guidance of the National Assessment Centre, NCERT and SCERTs. The nomenclature used, i.e. progress cards tends to point to the need to make it more wholesome in its character encompassing mental, emotional and psychomotor skills as markers of progress. This is a marked move from the existing method where progress

cards have marks of letter grades, mirroring static performance during timed tests during the school year.

3. Amended Board Exams

Understanding the pressure Board Exams have on students, and their impact on creating a coaching culture, NEP 2020 attempts to amend these. According to the document, Boards Exams, will continue to be taken, but will focus on testing core capacities/competencies. The proposed plan will allow students to choose the subjects they want to appear for on the board and also permit them to take the Board Exams twice during any given school year, i.e. one main examination and the second one for improvement if the student wants to better their score. The intention behind such a policy is to make students spend more time at school, rather than coaching classes and be able to broaden their learning bandwidth, rather than limiting it to cramming for a test-based system of education.

The format of Board Exams is also suggested to be modified in the National Education Policy of 2020. It is proposed that Board Exams can be taken annually, semester-wise or even modularly to reduce the pressure on students, by way of distributed efforts throughout the year. For some subjects, such as mathematics, it is suggested to offer Board Exams at two levels, standard and higher level while for some other subjects it could be in two parts, namely objective type and descriptive type. These suggestions are being floated, to reduce the pressure and negative intensity associated with Board Exams which have been doctored into high-stake exams with large-scale implications on students' future.

4. Role of Councils

Suggestions about Board Exams are to be considered or implemented based on the guidelines prepared by the National Council of Educational Research & Training (NCERT) in collaboration with SCERTs, the Board of Assessment and the proposed National Assessment Centre. These are also required to align themselves with National Curricular Framework for School Education 2020-21 (NCFSE 2020-21).

5. Continuous Tracking

The policy also suggests concentrated efforts in tracking student progress, not limited to just Grades 10 and 12 but also in Grades 3, 5 and 8. However, these tests would be achievement tests focusing on basic literacy, numeracy and other foundational skills. The results of these intermediate tests would be then used for the improvement of the schooling system as these results would be disclosed in a public forum.

6. Empowerment

The progress of stakeholders, including schools, institutions, teachers, officials and communities will not be limited to only 'marks' obtained by students. Recognizing that educational attainment will be influenced by multiple variables and external factors, these will be considered in identifying performance and would factor into the development and accountability systems.

Assessment in Higher Education

Convinced with the role of higher education in creating a sustainable future with an economically developed workforce that contributed to a socially-conscious, cultured and humane nation, the National Education Policy 2020 accentuates the need for improving higher education institutes (HEIs). Amongst the many changes and improvements proposed in HEIs and their functioning, assessment practices are championed. The document asserts that the 21st-century demands higher education to create individuals who are good, thoughtful, well-rounded and creative who can publicly engage and productively contribute to society. At the same time, it also notes the challenges that plague higher education, the solutions to which can be found through robust assessment strategies. One of the primary challenges is due to the reduced emphasis on developing cognitive skills and learning outcomes and suboptimal standards of undergraduate education that result from the vast number of universities present in India. Both these aspects are a direct result of the testing methods prevalent in

Indian HEIs that focus more on rote learning and cramming than on testing higher-order thinking skills.

It must be accepted that the sheer number of students that enroll in Indian HEIs, especially central and state universities is steep and such situations do not lend themselves to better testing practices with high validity. With increasing numbers, practicality as a principle of testing overrules the need for validity or ingenuity in testing and regresses to standard forms of testing that can be administered quickly and results can be obtained expeditiously. However, there can be some changes that can be brought about based on the suggestions laid out in NEP 2020, which are discussed ahead. Suggestions given are:

1. Autonomy to Innovate

Resolving that creativity should be fostered in higher education the policy calls for more autonomy for institutions and teachers to innovate in all matters including assessment. A stimulating environment has to be created by the faculty members, ably supported by curriculum and pedagogy devised by institutions which can be measured through continuous formative assessment. The implication, in this situation, is that assessment must be able to align itself with the developed curriculum and echo the ethos of the pedagogy rather than being the static end-of-term administrative responsibilities.

2. Grading System

As per the policy, all HEIs will move from the norm-based grading system to a criterion-based grading system that can be employed to assess student achievement concerning the learning goals for each programme. This would lead to more transparency in the outcomes and make them more comparable.

3. Format of Assessment

A movement from high-stakes examinations toward more continuous and comprehensive evaluation is suggested in this policy. The reasons behind

such a move can be to undermine the negative wash-back that high-stake examinations have on students and their parents. Additionally, these high-stakes exams do serve a gate-keeping function which adds to the anxiety in students and inflict long-term penalty if these are taken once a year and follow a traditional testing pattern.

4. Faculty Empowerment

The policy claims to offer more freedom to faculty members to design their assessments. This is a welcome choice as faculty members are closer to the actual transaction that happens in the classroom and would be able to devise assessment strategies that suit their learners. However, it must be pointed out that in such situations it would be required that faculty members are trained in assessment theory and practices, to ascertain better assessment practices. Continuous Professional Development opportunities for teachers that cover formative and adaptive assessment of learning outcomes are also proposed as part of NEP 2020.

5. Technology & Assessment

NEP 2020 proposes the integration of technology to augment all aspects of education, including assessment. The creation of the National Educational Technology Forum (NETF) will aid the free exchange of ideas, on a digital platform, on how to enhance teaching, administration and additionally on assessment planning. This will expand the understanding of assessment practices as they will be pooled in from multiple sectors, institutions and people adding more value and dimension to assessment in HEIs.

6. Digital Education for Equitability

The use of online examinations cannot be said to be effective if the teachers are not trained. Thus the policy emphasizes the need for developing suitable training programmes that train teachers in online assessments. Challenges such as conducting online examinations at scale, types of questions to be used, handling technical difficulties and preventing unethical practices

are genuine concerns and teachers must be trained to solve or adequately address to them while conducting exams.

Institutional Capacity Building

National Education Policy 2020 also proposes to strengthen institutional bodies for assessment and testing. One of the major contributions is the constitution of a National Assessment Centre, christened as PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development) under the aegis of the Ministry of Human Resource Development. The key responsibility areas of PARAKH would be:

1. Setting norms and standards
2. Drafting guidelines for assessment and evaluation
3. Assisting the State Achievement Survey (SAS), a census-based survey
4. Undertaking the National Achievement Survey (NAS), assisted by NCERT
5. Monitoring learning outcome achievements nationally
6. Aiding school boards to align assessment patterns with 21st Century skill requirements
7. Ensuring assessment practices of school boards reflected in NEP 2020 principles and guidelines
8. Advising schools on new assessment strategies based on developmental research
9. Promoting collaborations between school boards for assessment practices
10. Ensuring equivalence of academic standards among learners across all school boards
11. Formulating guidelines and recommending appropriate tools for children with specific learning disabilities, resulting in equitable access and opportunities for them
12. Implementing online assessment and examinations

Another institutional development made as part of the National Education Policy 2020 is the promotion of the National Testing Agency (NTA). The primary focus of NTA would be to focus on university entrance exams and would deal with the following:

1. Offering high-quality standardized aptitude tests for university entrance
2. Developing specialized common subjects exams in science, humanities, languages, arts and vocational subjects
3. These specialized exams are to be offered twice annually
4. Promoting exams that test conceptual understanding and knowledge application
5. Assist universities to make their decisions based on student's subject portfolio
6. Serving the need for a premier, expert, autonomous testing organization for undergraduate, graduate and fellowship entrance examinations in HEI
7. Centralizing university entrance tests under one umbrella
8. Eliminating independent entrance tests designed by different universities
9. Reducing the burden on students, universities, colleges, and subsequently on the education system by centralizing entrance test design and administration
10. Allowing independence for universities and colleges to develop strategies for an entrance assessment
11. Piloting new ways of assessment using educational technologies
12. Using technology to assess 21st-century skills

Conclusion

To summarize, the role of assessment as described in the National Education Policy of 2020 can be presented diagrammatically as

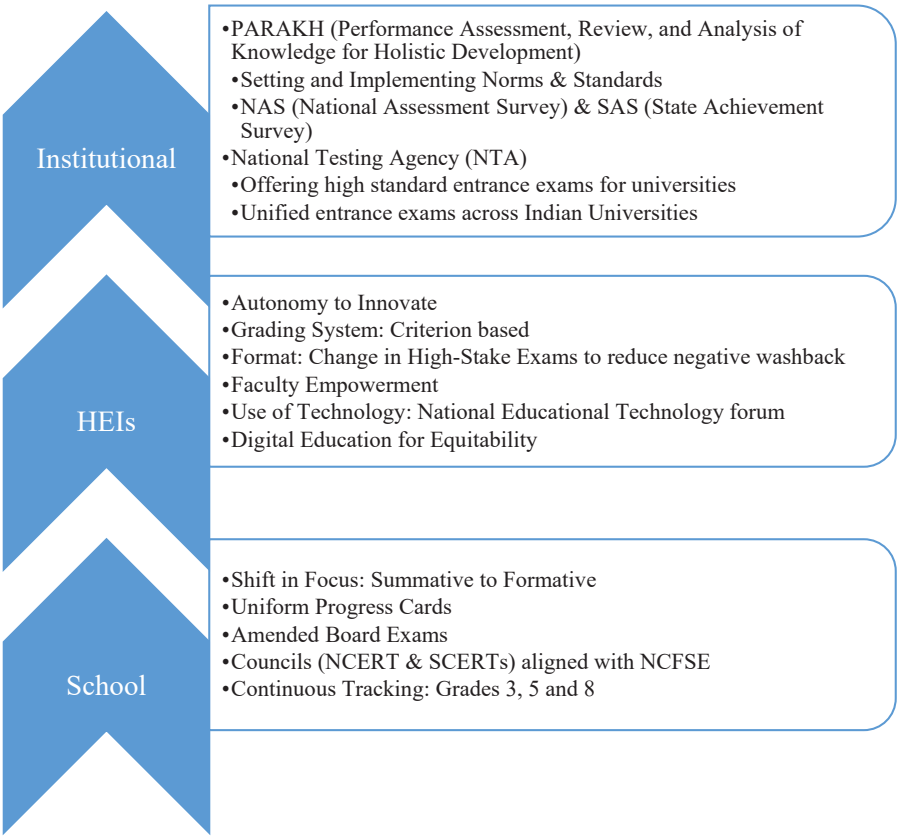

Fig. 4.1: A Comprehensive Snapshot of Assessment Presented in NEP2020

A policy must fulfill some basic criteria to be considered valuable to the public sector. As mentioned in the section on definition, it must be more than just a text and be multi-dimensional. India's National Education Policy is a 66-page document that claims to bring changes in the educational landscape through the proposals made. It also connects with domains of technology, digital equity and SDGs for its vision and in this term, it follows the norms of a policy document. The policy exists in the context of what the country is today, and what it hopes to be in the future once these suggestions are implemented. The recurring theme of 21st-century skills that depend more on critical thinking and higher-order thinking makes it more relevant in today's time. To convert this claim, into a reality, assessment practices must

be well-planned and structured. A progressive movement needs to happen from traditional testing, which is the hallmark of the Indian Education System, to a more organic method of assessment that encompasses what and how of learning rather than just limiting to how much of learning has happened. While utilizing the notions of cognitive development or characterizing how learning happens, the policy document interacts with policies from other fields such as educational philosophy and psychology; consequently requiring assessment practices to measure whether these have successfully occurred in the classroom or not.

However, as stated at the beginning, a policy may not always have only intended outcomes and may not always be straightforward in its implementation. This may be true, concerning the role of assessment in the National Education Policy 2020. Policies may lend themselves to the difficulty of being translated to reality as large-scale changes are deep-seated in financial copiousness, technological novelty and adeptness to change. The core of the issue may be in how well we respond to change. If stakeholders are reasonably convinced with the proposals made in the policy and can see the benefits from the perspective of assessment and evaluation then a positive movement will be on its way, this may lead to the other two challenges being rectified shortly.

Assessment practices and strategies are critical to any educational discussion, as most of the education is moving to one or the other form of assessment practices. Whether it is the traditional testing, or the more organic method suggested in the National Education Policy, assessment assists the stakeholders to comprehend the movement happening in learning and also predict the outcomes based on previous experiences. Thus the role of assessment as a policy-making tool cannot be undermined. The present chapter attempted to identify assessment as a subset of educational philosophy as it appears in NEP 2020, a detailed further study would be possible in investigating how assessment is used as a policy-defining tool and how it influences the educational system nationally.

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Chapter 5

The Heart and Soul of Learning- Teachers in a New Avatar

Dr. Pratibha Kumari Singh

Dr. Pratibha Kumari Singh is a passionate teacher and trainer with a vast experience of more than 15 years. She has been associated and worked with reputed organizations like Sushant University, Gurugram Haryana; Institute of Hotel and Tourism Management, Rohtak, Haryana; Jettwings Institute of Training, Gangtok, Sikkim; SRM University Sikkim; Sikkim Manipal University, Gangtok Sikkim, in her capacity of being a full time, visiting and guest faculty. She presents her ideas and lessons on teaching, learning, lessons and life on her blogs at pratibha.guru. When a Yes Centre Manager and Volunteer at International Award for Young People she witnessed transformation of students through non-formal education and achieve them win awards and accolades in skills, service, physical recreation and adventurous journey. Training and learning from IAYP has brought-in an integrated approach in her teaching and training method. In 2014 and then in 2017 the National Award Authority felicitated her with prestigious ***Certificate of Recognition*** for her Special Services to the International Award for Young People. She has contributed in various journals and books of national and international repute. Besides mastering- reading, writing, listening and speaking, she explores life through unknown and unseen trajectories and mediums. A firm believer in the existence of God, she is a spiritualist.

Introduction

National Education Policy delineates through its fundamental principles that "teachers and faculty" form " the heart of the learning process" (p.5). These key phrases position teachers at the center of the education system wherein they become responsible for the academic, social, emotional, intellectual, psychological, cultural, and overall holistic development of the learners. They impart knowledge to pupils and students who gain knowledge and wisdom through learning which is a conscious activity in nature. Therefore, NEP -2020 focuses on ensuring recruitment, continuous professional development, positive working environments and service conditions for all the teachers to build a very robust foundation for the Indian Education System.

In India, we have a very famous and popular *shloka:*

Gurur Brahma Gurur Vishnu Gurur Devo Maheshwarayah
Gurur Sakshat Parabrahma Tasmayi Shri Guruvye Namah

This *mantra* or *shloka* is chanted at the beginning of any auspicious event that takes place in an Indian context. It accentuates the position of a Guru or a Teacher who is next to Brahma-the creator of the world; Vishnu the operator of the world and Mahesh-the ultimate saviour of the world. This verse makes the Guru equivalent to all the supreme Gods ; and a disciple thus prostrates and beseech to seek blessings of a guru who is parallel to none, rather to the Supreme Being. To that Guru and giver of knowledge who dispels the ignorance and takes towards the realization of the truth of the ultimate and acquaints one with complete potential and to the true self, to that Guru, the disciple pays homage and offers *Naman*. Indian Scriptures and Vedas sing the glory of the Guru, a teacher, who guides, imparts knowledge, and provides experiential insights and wisdom to disciples and pupils through rigorous training and drills over a period of time.

One who leads by example and is a torch bearer- a Guru and a Master. A paragon of virtues and knowledge whom students follow and imitate.

Through their words, actions, acts and demeanor, they exhibit something that encourages each student to discover their true potential in their own way since each student has his/her own way to nurture and learn their lessons.

A teacher knows that each student is different and unique and accepts each one and designs the lessons that cater to their need and requirement based on the need analysis and deciding the level of each student. They foster holistic growth including the intellectual, emotional, physiological, physical and spiritual thereby making them realize 'who they are' -the ultimate truth and reality of their existence. The teachers make them realize the very purpose and objective of their education and why they need to have a goal, pursue it to know who they are. Encouraging their natural blooming and flowering.

Legacy of Indian Teaching

Since time immemorial and antiquity, the role of a teacher or a Guru is very important. All the Vedas and Indian scriptures are written by those Munis, Rishis and Sages who were Paragon of Knowledge and self-enlightened souls. These teachers had already walked on the path of truth and realized their infinite potential and therefore, they were the authority who would impart and bless their disciples with knowledge galore making them ready for the world to rule and protect following the laws of Dharma. This Indian tradition and value system is the very core of the education system that we follow. A teacher or a Guru is thus attributed with a knowledge pool, skill set, and virtues that make him worthy of worship and a role model to whom students imitate and learn from.

Guru, Valmiki, Vasistha Muni; Gargi; Meera, Kabir, Guru Nanak, Buddha, Jesus Aurobindo; Chanakya; Rabindra Nath Tagore; Aryabhatta; Shushruta; Charka; Dr. Sarvapalli Radha Krishnan; Dr. APJ Abdul Kalam, Vikram Sarabhai to name a few are the Indian Masters to whom the entire world knows.

In alignment with the Indian values and systems, National Education Policy 2020 presents a very promising and holistic growth for students and teachers both. While it is all focused on preparing and making students meet the personal and professional demands of the world. It is important to observe that these students are prepared by teachers who impart knowledge to them over some time, shaping their personality and honing their intellect. Therefore, teachers play a very significant role in the overall education system and hierarchy.

National Education Policy and Making of Teachers

While teachers always undergo a mode of training and self-development Programme that empowers them. However, 21st Century demands them to be digitally skilled, cosmopolitan in approach, flexible in resolving classroom issues and considering students to be fellow learners and travelers in the journey. 'Pedagogy of the oppressed' would not work in the present times because these Digi natives are already born with advanced technical skills and their exposure to the world of internet and smart devices make them well versed in usage, therefore teachers must understand their position. National Education Policy, therefore, presents a very robust structural framework for the advancement of teachers that ensures upgradation of teachers and students in a very holistic and symbiotic way. Wherein they both complement each other.

The Concept of a Teacher

Who is a teacher? Or what makes a teacher? These questions become imperative to know who qualifies to be a teacher. A teacher is someone who has pursued academic study in a specific subject over a period of time and has learned the basics and advanced concepts. Whose understanding is clear and whose concepts are strong. Who has theoretical and practical knowledge and understanding of the subject matter. One who has practiced the lessons at different stages and levels of difficulty. This person is trained in the subject and domain and is now ready to deliver the knowledge to the

students. Besides the knowledge of the field and subject, a teacher needs to be well versed, must have an understanding of classroom dynamics, understand the needs and wants of disciples in the classroom; be abreast with the latest trends in teaching and has knowledge of pedagogy to cater to the individual growth and learning of each disciple in the classroom. One who is impartial, caring and affectionate and knows difficulties coming into the class and ways to handle them well. One, who has a humane attitude and is ready to upgrade oneself in the field of knowledge, with devotion, passion and interest.

NEP 2020 Framework for Teachers

Through the following framework, NEP 2020 provides a road map for the development and progress of teachers.

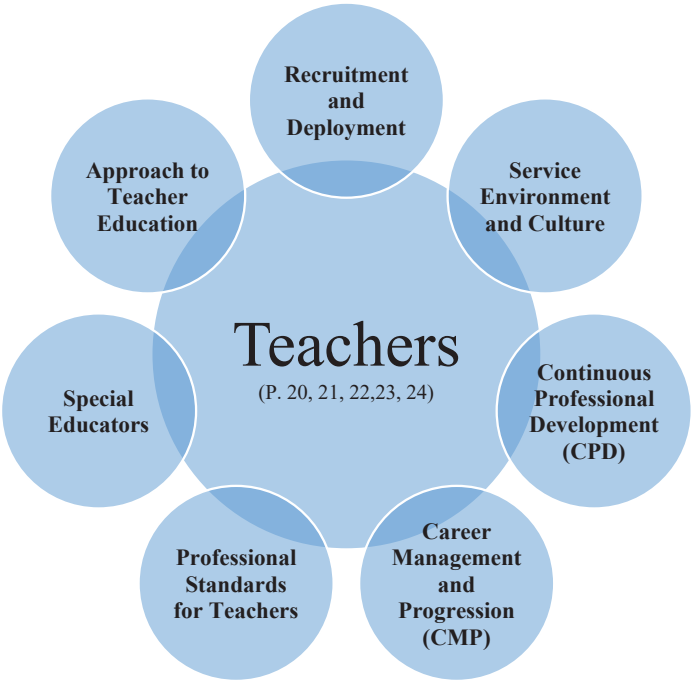

Fig. 5.1: A Road Map for Development and Progress of Teachers

Recruitment and Deployment (5.2 to 5.7)

Recruitment and deployment make a very important parameters for the selection of the right candidates for the profile of teachers. While NEP policy takes care of a lot of aspects that were not addressed and taken care in the previous years and while the veterans had the vision of what is important, somehow, the ground reality differed. This policy offers a multitude of options through which talented and passionate students take up the job of a teacher for eg: the provision of merit-based scholarships for those who are in rural areas and; the introduction of four years integrated B.Ed. Programme allowing them to get job offers in their local areas; facility to conduct online screening to curb transfer cases; conduct of Teacher Eligibility Test (TET) through a regulatory body such as National Testing Agency (NTA) to ensure transparency and selection of knowledgeable candidates who are experts in pedagogy and content both; hiring of an erudite professional in various fields to augment knowledge pool of students and last but not the least construction of a technology-enabled system to assess teachers, their performance on a timely basis.

Service Environment and Culture (5.8 to 5.14)

The environment and culture of the place wherein teachers work must provide them impetus and sustenance to be productive, creative, artistic and innovative in their pedagogy and knowledge dissemination to perform their job with effectiveness and enjoyable way. Through their cohesive environment, the administration build communities wherein teachers, students, parents and other local key stakeholders and support staff work with the common objective to facilitate optimum learning of the children. For this, an array of adequate infrastructural arrangements to be made by the government and institutes that make the working environment safe, conducive to learning and healthy. NEP proposes to adopt innovative formats that provide leverage at all the levels of schooling and administration enabling to foster a relationship between the teacher and taught that used

to happen in the ancient time in *Gurukul* where the teacher and the taught would stay together and imparting of the lessons would continue until all the lessons were learnt by the disciples. This is only possible when school complexes allow housing spaces for the teachers to stay and engage in creating and effective learning environment.

Further, an important highlight of NEP is to involve teachers in interaction with students and reduce their involvement in anything that overburdens them like long hours of grueling administrative tasks. The prime focus will be to provide maximum hours for teachers in carrying out their teaching responsibilities and mentoring and sharing with the students. While in the administrative role Principals would ensure a caring and inclusive culture, there will be autonomy provided to teachers in terms of pedagogy keeping learners at the core. Innovative methods to catapult effective teaching and holistic growth of each learner shall be recognized and acknowledged.

Continuous Professional Development (CPD) (5.15 to 5.16)

From the day of joining till the teachers retire, there is a long and arduous journey of teaching, training and research that they all undergo. It is, therefore, very important to provide ample opportunities to teachers for their career and professional enhancement that assure their learning and blooming in the form of a teacher. It is expected that every teacher participates in 50 hours of CPD training every year that could be at local, regional, state, national or international in the form of a workshop, conference, conclave or symposium, etc.

Besides teachers, school Principals and school complex leaders will have another set of training and leadership workshops focusing on the growth and advancement of their effective administrative, managerial, and leadership skills set in online and offline mode wherein wherein they mutually share the best practices. These leaders, like teachers, will also be

expected to complete 50 hours of the CPD module and implement and integrate effectively the practices learned into their systems.

Career Management and Progression (CMP) (5.17 to 5.19)

Best work and practices by teachers must be recognized and duly promoted wherein a raise in their salary based on their appraisal, promotion should be provided. Incentives to meritorious teachers based on a merit-based system that evaluates performance in 360 Degree is something that this policy conceives of. Those who are conspicuous in their performance would be provided higher leadership roles.

Professional Standards for Teachers (5.20)

NEP envisions to set National Professional Standards for Teachers (NPST) by 2022 under the edges of the Professional Standard Setting Body (PSSB), General Education Council (GEC) in consultation with NCERT, SCERT that shall aim to focus on various levels of teachers training, preparation, development, vocational training across levels at district, regional or national level ascertaining measuring of their academic and professional competence and keeping a track of their timely appraisal. This will also keep an account of salary and promotion of teachers on a very transparent and 'rigorous empirical analysis of the efficacy of the system.'

Special Educators (5.21)

Teachers who display oceanic love, affection and have demonstrative patience to handle children with special needs are the ones who are required in education, this is what NEP highights. These are *Divyang* children who need attention, care and special handling, therefore, special educators are those teachers who are trained and have relevant skills to take care of these children besides imparting their knowledge and taking care of their growth and development.

Approach to Teacher Education (5.22 to 5.29)

Teacher education by 2030 will move to a level of multidisciplinary level wherein focus on learning higher levels of content and lessons in advanced pedagogy will be provided through courses offered in B.Ed., M.Ed. and Ph.D. Programmes. These integrated courses will focus on equipping the teachers with knowledge of the domain and also providing practical hands-on experience in their respective fields of specialization.

Therefore, to facilitate and make teachers who are ready to face challenges and issues in classroom settings, administrative roles and governance, specific tests are being conducted by the Government of India. For each level, there is a different and specific test that each aspirant who wants to become a teacher must qualify. These tests and training programs are determiners of ones eligibility to qualify as a teacher at the state and national levels, for primary, secondary and tertiary education.

BITE and DIET should promote 'special shorter local teacher education programmes' that cater to encouraging of involvement of local distinguished masters and professionals who could empower students and teachers in varied fields of interest including art, agriculture, music, sports, carpentry, vocational crafts, etc. to name a few. Moreover, shorter post-B. Ed. certificate courses will be offered to all those who want to specialize in teaching students with special needs, into leadership or management positions.

Collation of several pedagogical approaches will be done by NCERT based on their research at the national and international level and whatever is best suited to the Indian context would be recommended for assimilation into the system for effectiveness in teaching. Formulation of the National Curriculum Framework for Teacher Education and Teacher Education Institutions (TEIs) will be made to ensure quality and integrity in Teacher education.

A Brief of NEP 2020 Highlights on Teacher Education (P 42-43)

15.1	Emphasis on overall education and preparation of teachers thereby inculcating in them Indian values and ethos that they could impart to the next generation. To achieve this goal, they will be prepared under the guidance of the best mentors.
15.2	Constant monitoring should be done to ensure curbing of *malpractices* in the education system wherein quality is compromised and degrees sold for a prize. Therefore, radical action must be taken to raise standards and ensure the quality of the teacher education system.
15.3	To maintain the levels of integrity, Regulatory system shall be empowered to take stringent actions against TEI's that do not meet the demand.
15.4`	Creation of composite Multidisciplinary institutions by 2030 for facilitating the education of teachers.
15.5	B.Ed 4 years integrated to be considered minimal degree qualification for school teachers.
15.6	HEIs to have a syndicate of subject experts who can train and involve in community building activities.
15.7	Subject tests and aptitude tests to be conducted and standardized for selection and pre-service teacher preparation by **National Testing Agency.**
15.8	Focus on strengthening the multidisciplinary education and profile of teachers in the Department of Education to ensure long term retention and academic rigour.
15.9	Ph.D freshers to be provided with a wide range of exposure through credit-based courses; involvement in institution building and effective teaching methods to provide a road map for their career.

15.10	Ensuring in-service standardized training programmes for continuous professional development to a large number of teachers within a short span of time. Technology enabled platforms **SWAYAM/DIKSHA** to be optimally exploited for such initiatives.
15.11	Vision for the establishment of a **National Mission for Mentoring** with purpose to create a large consortium of erudite and esteemed senior/retired faculty- who would not only enrich the teachers and faculty with their knowledge of the Indian ethos, tradition and culture but would also be willing to impart their experiential knowledge to young ones and empowering them with professional skill set in course of time.

Table 5.1: NEP Highlights on Teacher Education

Issues and Challenges Faced by Teachers

1. **Infrastructure** becomes an issue for the growth and learning of teachers when they do not find proper space for their sitting and work. Provision of conducive places for their work, creative pondering resulting in their growth and learning is a must. A place where these teachers can sit, discuss, and then ponder, complete their everyday work, have space to keep their resources and privacy to work on projects of their interest and talk to students about their subject and progress. A place wherein they can focus on evaluation and assessment of the subjects given. In the lack of proper infrastructure, teachers' creativity and newness might be impeded. Institutions that provide state-of-the-art facilities confirm and assure that there is individual blooming and growth of the faculty.
2. **Availability of Resources**: is the key to learning and growth of knowledge. First and foremost are the books from which the teachers learn and gain knowledge and equip themselves with the concepts to be taught in the class. The reference books, their availability and access

are of utmost importance. Teachers and professors must be provided with relevant and updated resources of books, references, CDs, dictionaries, thesaurus, encyclopedias, biographies and other such study material that enable them to prepare lectures that are updated, relevant, and knowledge-based with examples relevant to the need of the students and are of their level of interest. School Libraries, Central Libraries, Departmental Libraries and Digital Libraries must ensure the availability of the latest resources in each field.

3. **Finances**: Governance and administration in private, state and central universities schools and colleges must follow the UGC norms of salary package according to grade. Perks and allowances should also be provided to teachers, staff and administration to tap and suffice to their individual needs. While the policies are always promising of such handsome salary packages, however, in the real scenario due to internal reasons, the salary of the teachers is not kept at par.
4. **Student-Teacher Ratio**: Be it at primary level, secondary level, senior secondary level, or tertiary level, the student and the teacher ratio is something that must be monitored and checked for quality assurance. This ratio assures that teachers can give their full attention to each student present in the class, thereby monitoring their progress, keeping a track of their progress, performing a regular evaluation, tutoring and coaching them on the subjects and providing regular feedback wherever needed for their growth and development. Large size classrooms and less number of faculty pose this challenge and therefore they must be checked for quality teaching.
5. **Work Overload and Multiple Responsibilities** while the policy document and government papers claim the fixed number of hours for the teaching in the class per day/per week at each grade, however, it is observed that actual hours in the timetable for the teachers are attributed more, thus exhausting them with physical and cognitive overload. Teaching involves other sets of roles and responsibilities including correction work, attendance record, evaluation and assessment, and project guidance to name a few. Therefore, a close check on the number of hours wherein they

get time to engage meaningfully in the other academic activities of equal importance must be provided and taken care of by the administration. A relaxed and joyful teacher with sufficient time to cater to each academic assignment is bound to be more productive and effective than one who is overloaded.

This list of issues and challenges faced by teachers is only comprehensive and not exhaustive because at each level of education and hierarchy there is a multitude of impediments that need an immediate address from the policymakers and administrators. These are sensitive issues that strengthen the making of quality teachers if taken care of, otherwise, talented and sharp-minded individuals might find an escape to find other job opportunities and options leaving a dent in the system of education.

Conclusion

NEP 2020 provides a very promising future for academicians and teachers through constant exposure to development programmes and initiatives that ensure their career, intellectual and spiritual growth through training and regular career enhancement goals. Their appraisal, constant feedback, and multiple avenues in academic and professional domains ensure they find meaning and purpose in this noble profession of teaching. While being content and most satisfied, they become the epitome of knowledge. This myth that teachers are born is deconstructed because through education and passion in the field, few are born, many are trained to become well-versed and competent teachers. Their firm foundation and strength ascertain building of a strong education system with academic rigour that could be followed in centers of excellence and knowledge fields from primary, secondary and tertiary levels of education.

This knowledge and *Gyan* from the ancient *Vedic* time finds new expression and meaning through digital exposure and multi-lingual structure giving new voices to these teachers in the 21st Century. Making the Pupil learn the concepts and ideas, practice and rehearse them and then apply them in their life to relate and understand how knowledge liberates is the true

purpose of their profession. Empowered and equipped with relevant skill sets and virtues these Teachers of the 21st Century engage each student and tap the infinite potential present and nurture and foster them following their innate talent and abilities. Their experiences, research and classroom practice and hands-on exercise guarantee that they not only make their students learn but also imbibe and assimilate the lessons until the knowledge is churned into wisdom. Learning by doing is their *mul mantra*. From dissecting the stigma, identifying the petal from a sepal then teaching them the astrophysics of the cosmos most easily and enjoyably integrating mind and heart where learners learn the most, is the ultimate goal of the teachers.

In brief, this chapter portrayed the key highlights of the NEP 2020 concerning Teacher Training and Education, their recruitment and selection, career path and trajectory, working environment and culture for their growth and professional development, the standards to be maintained and regulatory bodies that focus on taking the important decisions concerning their quality performance at school level and a higher level of education. In nutshell, this chapter elaborated on 'who is called a teacher or a Guru in the Indian system' 'what qualities and attributes they should have and 'how they train students to make them realize their true potential' thereby keeping a track of all those important aspects that are taken care of by the National Education Policy 2020 and provides a contextual review of how these would be implemented with effectiveness if certain things of importance are taken care with immediate effect to build quality teachers and build a strong nation.

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– Part 3 –

Education and Way Forward

Chapter 6

NEP 2020: Paving a Way for Resurgence of Research in Higher Education in India

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Dr. Sanjay Karn is a faculty in the Department of Tourism Management at Sikkim University, where he has been since 2019. From 2018 to 2019, he served as a consultant at the Himalayan Research Action Centre. He looked after the ecotourism component of the UNDP-funded project. He was also associated with the NITI Aayog Project in the Indian Himalayan Region. He also worked as a faculty in the Department of Tourism Management for the academic session 2013-2014 at Indira Gandhi National Tribal University.

His research interests span the fields of sustainable tourism, wellness tourism, hospitality management, and destination supply chain models. He has eight years of rigorous research experience. He has worked on the relationship between health consciousness and destination attachment in the wellness tourism arena. He has also investigated a theoretical framework for wellness tourism motivation factors. In addition, he has made plentiful contributions to the fields of tourism and hospitality on the topics of tourism concepts and theories, tourism motivation,

fundamentals and dynamics of event management and tourism undertaking.

Dr. Karn has put forth his knowledge and ideas in the content writing of Swayam, e-pg pathshala and universities like IGNOU and OSOU in the areas of tourism and hospitality. His written content was taught in several certificates, diplomas, and degree programs. His written concepts on Neuromarketing and Tourism Innovation Ecosystem were published in "Encyclopaedia of Tourism Management and Marketing".

Dr Karn is renowned for preparing postgraduate, Mphil and PhD students for research activities and for preparing them to further their careers via research.

Introduction

India cherishes its illustrious history, but it also cannot ignore the grim reality of the present. Today, rote learning is considerably more essential in India than research. It is pertinent that today India demonstrates;

- Lack of a conducive environment for innovation.
- Lack of enough researchers.
- Lack of sufficient resources.

Although Indians are incredibly intelligent and eager to learn, the focus is always on making money. Students are running a rat race and rushing for coaching sessions from their earlier student years and then for job placement in their later years. According to McKinsey Report (2017) on private sector employers, only 0.4% of engineering graduates are capable of finding employment right away, and less than 20% of engineering graduates have the fundamental know-how and abilities to fit in with the business and be ready for retraining. This grim condition has been exacerbated by several private "diploma mill" institutions that 'doctored' their teaching and research outputs to flourish. This profiteering was made possible by UGC and AICTE bureaucracy that gave educational licences to private entities. The National Academic Accreditation Council (NAAC)

contributed to the problem by approving questionable programmes that had little application to the workforce or research.

According to Indian Express Survey, more than half of the top scorers in the classes of 10 and 12 from 1996 to 2015 had migrated, enrolled in a study abroad programme, or worked there. Ministry of External Affairs states as of January 2021, 1.09 million students from India were enrolled in 85 different countries. The widespread feeling among students is that the existing Indian educational system is failing to adequately prepare them for the demands of the increasingly globalised world. A large number of young students are leaving Indian soil for higher education abroad due to the dearth of innovative courses and better education facilities. According to the Organization for Economic Co-operation and Development, nearly two-thirds of students moving out of India were well educated, having acquired academic or vocational training, which is the largest percentage of any nation. The prevailing education system design is still too tightly regulated and unable to create opportunities and provide chances for its finest and brightest. India has the brainpower to achieve significant advances if curiosity and innovation are the main priorities.

Need for Research

The spiritual wisdom, philosophy, scientific temperament, and rich culture of ancient Bharat are well established, but the Indian educational system is declined over time. The relevance and heritage of the old Indian knowledge system were never passed on to succeeding generations. With the implementation of Macaulay's system, which was intended to produce a labour force to serve the colonial overlords, ancient Indian education was either eradicated or abandoned under the Colonial authority.

Historically, the finest Higher education institutions (HEIs) in the world are those that create high-quality knowledge. Furthermore, teachers in HEIs are actively engaged in the process of knowledge creation and pass on the abilities of innovative thinking, creative thinking, and a research mentality to scholars. Research should be encouraged at HEIs all around

the country to ensure the success and vitality of the country's higher education system. Unfortunately, less than 1% (approx.) of 40,000 higher education institutions in the nation is currently engaged in research. India's research potential has been greatly diminished due to the large majority of the teachers and students in higher education institutions being completely uninvolved in knowledge development.

Some of the major socio-economic issues facing India today, including access to clean drinking water, high-quality education, sanitisation, and other issues, require the adoption of strategies and solutions based on cutting-edge scientific research and technology but also deeply rooted in the social sciences, humanities, and other socio-cultural facets of the country. India must undertake independent research and researcher across disciplines to produce long-lasting answers to major social problems. These problems require high-quality, interdisciplinary research across domains and cannot be imported or outsourced.

Research and Innovation Status

The first prime minister of India - Jawaharlal Nehru, endorsed the Scientific Policy Resolution to advance science education. The Nehru administration financed elite educational institutes like the Indian Institute of Technology (IITs) to advance engineering and science. Our national laboratories, IITs, IISc, IISERs, TIFR, and Central Universities serve as the foundation for our strong research and development points. A robust research environment has to be created at these universities and colleges since more than 95% of our students attend state universities and colleges where research is still sparse.

Compared to other nations in the world, India's R&I investment as a proportion of GDP is quite low and has decreased steadily over the last ten years, falling from 0.84% in 2008 to about 0.69% in 2018. In comparison, R&I spending as a percentage of GDP in 2018 was 4.3% in Israel, 4.2% in South Korea, 2.8% in the U.S., and 2.1% in China. The comparatively small number of individuals who are funded to undertake research in India

reflects the modest percentage of GDP that India spends on R&I each year WIPO (2021). According to the Economic Survey of India, 2016–17, there are just 15 researchers per lakh of the population in India, compared to 825 in Israel, 423 in the U.S., and 111 in China. India's financing for such a tiny number of researchers inevitably hurts the country's metrics for research output.

India's research efforts continue to be inadequate. The total annual gross domestic expenditure on research and development (GERD) has been 0.75% of GDP for the last two decades. According to the Department of Science & Technology (DST) 2020, India had 253 full-time equivalent (FTE) researchers per million people in 2018, which is 11% less than a small country like Italy. By the percentage of researchers in India by field, Engineering & Technology - 56.0% in the natural sciences -14.8%, Health Sciences - 14.8%, Agriculture - 11.9%, and Sociological and humanistic fields - 2.5%. The amount of research done is stagnating, and few domestic businesses, research institutions, and universities and their research effort remain unsatisfactory.

According to Forbes, 30% of Fortune 500 business CEOs are from India, and one-third of all engineers are in Silicon Valley, USA. Despite this, venture capitalists have limited investment due to the lack of technological innovation in India, which has caused the country's entrepreneurship to decline slowly. According to a study by the IBM Institute for Business Value and Oxford Economics, 90% of Indian businesses fail within the first five years due to a lack of innovation. It is supported by the Global Innovation Index (GII) 2021 data, where India ranks 46th overall among the 132 economies. However, it has steadily increased its ranks from 81st in 2015, India ranked 57th in innovation inputs, 45th in output, and 35th in "Research & Development."

Researchers are people who perform research and produce ideas, concepts, models, theories, model testing procedures, instruments, software, or operational methods. The UNESCO Institute for Statistics reports that per million people, there were 253 researchers involved in R&D in India

as of 2018, compared to 8053 in Denmark. At the same time, Israel spends about 4.95 per cent of its GDP on research and development, compared to 0.64 per cent in India. These numbers demonstrate both the shortage of resources and the scarcity of researchers in India.

All India Survey on Higher Education (AISHE) report released in 2021 states that 1043 Universities, 39050 Colleges, and 10011 Stand Alone Institutions are listed for the academic year 2019–20. In India, most colleges only offer programmes at the undergraduate level; post-graduate level programmes are offered by 35.04%, whereas PhD level programmes are offered only by 2.7% of institutions. The Gross Enrolment Ratio (GER) in higher education is 25.8%. PhD enrolment was less than 0.5% of all student enrolments in 2019. The PhD enrolment in Central University is 24194; state public university is 53008; state private university is 23406.

In the higher education system in India, there is a persistent deficit of academic staff. However, statistics released by the education ministry at the beginning of this year indicated that roughly 74% of positions remained unfilled at IIMs, which showcase the grim conditions in primer institution. Out of the 10,814 positions available to be filled, 3,876 are in IITs, 403 are in IIMs, and 6,535 are in central institutions, including IGNOU. Out of the total 17,092 sanctioned teaching positions at the 40 central institutions, 3,904 are temporary faculty members, and among them, 1,931 were *"Guest Faculty",* and around 1,820 were employed on a *"Contract Basis"*. The University Grants Commission (UGC) is not considering any proposals to hire the ad hoc lecturers permanently, nor is it in the mood to fill these sanctioned posts very soon. In the private sector, the job picture is worse. People will not enter this career until the work conditions change. In institutions owned by the government, there is no prompt hiring. Most professors do not do their research, training, and teaching well. Given these conditions, none of the colleges and universities in India is among the top 100 universities in the world.

India's Research Output

Number of Patents: India produces fewer patents than other countries do. The World Intellectual Property Organization (WIPO) 2017 report, states that China filed 13,81,584 patent applications, the United States 6,06,956, while India only filed 46,582, with 68% of those applications coming from non-resident Indians.

Number of Publications: India has been doing considerably better in publications, with a consistent increase in its production and increasing its percentage of scientific publications from 3.1% in 2009 to 4.4% in 2013 to 4.8% in 2016. The USA (17.8%) and China (18.6%) each published around four times as many papers in 2016 as India, according to a 2018 collection of Science and Engineering data by the U.S. National Science Foundation.

Quality of Research: Additionally, Indian publications have consistently fallen well short of international norms in terms of quality. India is fifth in the world in terms of overall publications; however, it is far lower at position eleven in terms of the effect of citations. Only 15.8% of all articles are in the top 10 journals, as opposed to 27.6% in China and 36.2% in the United States, for example. Our R&I's overall quality presently falls short of accepted international norms. The top 100 R&I institutes worldwide do not include any of our institutions. Indian scientific papers have an average citation rate of 0.86 between 2013 and 2015, while the G20 average is 1.02. Only 18% of Indian articles' have foreign co-authors, from 2016 to 2018, while the G20 average is 25% (UNESCO Science Report).

Major Causes of Low R&D Levels

- Lack of Research Culture Lack of coordinated and integrated planning.
- Lack of Emphasis on creative and analytical thinking in educational institutions.
- Left out of fundamental research in science
- Predisposed to an immediate outcome.

- Better opportunity to undertake research overseas
- Government R&D spending is little
- Poor governance and political interference in the choice of research topics and funding sources.

National Education Policy

Countries design their educational systems to advance, and encourage education across all socio-economic groups and include the general populace in the mainstream. National policies like NEP-1968 and NPE-1986 have previously been implemented in the country. After much deliberation over the last several years, the NEP 2020 policy is now in place; two prior versions were presented by two committees, the Subramanian Committee (May 2016) and the Kasturirangan Committee (May 2019). The country's third education policy document, the National Education Policy, was adopted by the union cabinet on July 29, 2020, after a 34-year gap since the prior one.

In order to guarantee ongoing learning, NEP 2020, based on 22 guiding principles, focuses on five pillars: affordability, accessibility, quality, equity, and accountability. It has been designed to meet the populace's demands because of the need for knowledge in both the economy and society, which necessitated the continual acquisition of new skills. Thus, the focus of NEP 2020 is on providing high-quality education and fostering possibilities for lifelong learning for everyone, eventually leading to full and productive employment and decent work as outlined in the United Nations Sustainable Development Goals 2030.

The NEP 2020 is credited with emphasising a more playful and inquiry-based approach to learning while supporting research and innovation at the school level. The objectives of NRF include:

- sponsoring peer-reviewed research on a merit-based yet equitable basis,
- providing appropriate incentives and recognising excellent research, and

- establishing and expanding state universities and other public institutions.

The three distinct facets of India's NEP are as follows:

- **Concerns** relating to Students, Education, Institution, and Research
- **Focus** on development, multi-disciplinary learning, higher education, quality, and vocational training.
- **Anecdotes** of Teaching, integrity, regulation, innovation, and knowledge.

The policy seeks to reduce the number of institutions in the Indian higher education system across the three types of HEIs and HEIs clusters to increase the gross enrolment ratio (GER), which has a target of rising to 50% by 2035. It has also further chosen to invest up to 6% of its GDP from the current 4.43 per cent in the education sector. It will also help meet resource efficiency, multi-disciplinary capacity, multiple entry and exit, maintaining an academic bank of credits, and quality higher education in India.

NEP 2020 attempts to solve the brain drain problem by fostering new research and offering enough funding for all disciplines via the National Research Foundation (NRF). One of the main suggestions of the Draft National Education Policy 2019, which the Ministry of Human Resource Development ordered in 2017, was the National Research Foundation. With a total expenditure of Rs 50,000 crore over five years, the National Research Foundation is being created for the first time in the nation. The purpose of the NRF is to improve India's research ecosystem. It is anticipated that NRF will serve as an umbrella organisation. Over 40,000 higher education and research institutions nationwide are supported by the National Research Foundation in developing their research capacities. The NRF proposal intends to strengthen connections between universities, industry, and R&D.

NEP for Research

NEP proposed the establishment of the Higher Education Commission of India (HECI) as a single umbrella organisation for the whole higher education sector. (Excluding medical and legal education) (NEP section 18.3).

The following four pillars will support this:

1. *National Higher Education Regulatory Council (NHERC):* The NHERC will concentrate on "light but strict" regulation, with a focus on financial transparency (NEP section 18.3). The treatment of privately and publicly sponsored HEIs will be equal. The NHERC's main objectives will be good governance, financial transparency, and financial probity via disclosure.
2. *National Accreditation Council (NAC):* As a "meta-accrediting agency," the NAC has been given the responsibility of taking the lead in creating an ecosystem of accreditation organisations to include all HEIs (NEP section 18.4). The NAC must perform the significant task of evaluating the quality of the institutions and screening them.
3. *Higher Education Money Council (HEGC):* According to (NEP section 18.5), the HEGC will allocate grants based on open standards and the international development plans HEIs submit.
4. *The General Education Council (GEC):* An organisation that sets academic standards and is dedicated to improving educational quality and learning results (NEP section 18.6). Professional standard-setting bodies (PCBs) will be created out of organisations like the National Council of Teacher Education (NCTE) and the Indian Council of Agricultural Research (ICAR), and these organisations will ultimately join the GEC. To promote the integration of vocational education into higher education, the GEC will develop the National Higher Education Qualification Framework (NHEQF) in accordance with the National Skill Qualification Framework (NSQE). Through the NHEQF, the GEC will set standards for credit transfer and equivalences.

According to the policy, *"the higher education system would undergo a full makeover and re-energisation."* If the proposal is implemented, higher education institutions will fill the Indian higher education ecosystem by 2040. HEI will include colleges and universities in both the public and commercial sectors. They will all be *"multi-disciplinary,"* with more than 3,000 students enrolled, and at least one will be *"in or near every district."* Universities will carry out teaching and research, with some universities focusing more on teaching than others.

The NEP advises increasing the pace of growth in the gross enrolment rate in higher education. By 2025, at least 50% of students should be enrolled in vocational education *(NEP section 16.5).* The public and private sectors are anticipated to contribute equally to the growth. College affiliation should be phased down over 15 years.

The NEP has proposed three categories of institutions: Research-intensive universities, teaching-intensive universities, and autonomous accredited colleges (A.C.). It also proposed the possibility of transitioning from A.C. to the other two categories depending on their performances and plans *(NEP section 10.3).* By 2030, all institutions will be urged to transform into multi-disciplinary education and research universities (MERU). The NEP recommends that roughly 100 institutions be designated as research universities in the near future. In addition to providing excellent education at the bachelor's and master's degree levels, these institutions will emphasise research and doctorate programmes. The remaining 900+ universities will all be teaching institutions focusing on providing a top-notch education.

Additionally, these institutions are supposed to do little research and provide limited PhD programmes. The research university should be entirely independent, with self-perpetuating boards that only have a small representation of government employees or appointees. It recommends that the various ministries expand their investment in research, and strengthen the linkages between universities, the economy and society.

The NEP wants to employ more technology in the classroom. There is a clause in the policy stating that technology or e-learning is essential

nowadays. The policy also states that a National Education Technology Forum (NETF) is to be established so that it may serve as a forum for discussing the use and advancement of technology. Institutions of higher learning would be able to respond quickly only if Quality Ed-Tech tools were hosted across all delivery dimensions for teaching and learning.

The National Education Policy (NEP) 2020 plans to encourage high-calibre research inside the higher education system. For higher education institutions to provide students with a high-quality education in HEIs, research and innovation are two crucial factors. Self-reliant India *(Atma-Nirbhar Bharat)* will only be achieved through research, innovation, and technology development. It is anticipated that the institutionalisation of research internships at the undergraduate level will be crucial in fostering inter-disciplinary, multi-disciplinary, trans-disciplinary and translational research culture among institutions and subjects.

The newly proposed course structure in the NEP, 2020 envisions the inclusion of a research component in degree programmes. Especially for the four-year degree programme leading to a bachelor's degree (research), the fourth year is devoted to helping students improve their research skills. The Level-8 of higher education certification level descriptors state that students should be able to pick up some of the research-focused competencies by completing classes in the research ability enhancement courses (RAEC) and working on a research internship project.

A research internship aims to teach students different elements of doing high-quality research while also giving them hands-on experience with research tools, procedures, methodologies, and equipment. There will be two different types of research internships:

1. Research internships to improve a student's employability
2. Research internships to foster a student's aptitude for research.

Internship rules Apprenticeship or Internship Embedded Degree programmes and vocational programmes are accessible from UGC. Engineering and technology programmes are available from AICTE.

The smooth operation of a research internship would be made possible by the HEI (parent Institute) and the Internship Provider Organization (IPO). A centrally controlled Research Internship Portal (RIP) would also assist HEIs in organising research internships for students. It fosters an environment where students may actively pursue information, acquire it, and use it to address difficult or real-world challenges. It will give U.G. students the chance to acquire the knowledge, comprehend, and develop the communicative, technical, and management abilities necessary for research.

For all government recruiting tests, efforts are to be made to establish a National Recruitment Agency; for several exams of the same level, a Common Eligibility Test (CET) is to be taken. The Central University Entrance Test (CUET) will provide students with a single-window chance to apply to these participating Universities / Institute(s) throughout the nation for admission to various programmes of participating Central Universities. It will improve admission transparency and attract the brightest students from rural areas.

The NEP planned to establish special education zones (SEZs), where all programmes and policies are implemented to the fullest extent possible with extra coordinated efforts *(NEP section 6.6),* in regions with significant populations from socioeconomically and educationally disadvantaged groups (SDGs). The strategy also seems to focus on developing innovative programmes to address problems marginalised groups face, including minorities, Dalits, and Adivasis *(NEP section 6.8).*

In the digital era, instructors must regularly get comprehensive training on new teaching methods, technologies, and curriculum management. In a virtual environment, a teacher's responsibility in developing students' critical thinking, introspection, life skills, and cultivation of empathy has more significance. The use of digital learning in the teaching and learning process is also gaining steam in India's higher education thanks to several digital online platforms, including *Sawayam, MOOCs, NDLI, Sawaywam Prabha, e-PG Pathshala, Diksha, Vidya Daan*, and many more.

The NIRF and NAAC are both directly engaged in evaluating and assessing the quality indicators of higher education institutions as a whole. In addition, the government has shown interest in policy research and governance related to social development by sponsoring academics' studies via programmes including Impress, Stride, and seed research. The UGC has made a highly unique and courageous move to encourage quality research and stop it by developing the UGC-CARE list of journals for excellent academic writing and '*URKUND*' and '*Turnitin*' to prevent plagiarism.

Criticism

By 2040, India will have a world-class educational system with equal access to the best education for all students, regardless of their social or economic status. A careful analysis of the policy sends conflicting messages about how the important issues of equity and inclusiveness will be addressed.

The lack of operational details and practical specifics gets evident in the last chapter, *"Making it Happen,"* of the NEP. This title addresses crucial issues of *"how to",* including strengthening the Central Advisory Board of Education, finance methods, and implementation strategy. It has been a bone of contention with the UGC regarding the selection of funding fairly and equitably, particularly among the centrally sponsored institutions. It has not yet been made apparent in the NEP how the funding would be distributed and how much of it will be based on historically established input costs or normatively calculated following certain criteria.

Even after 54 years, the pledge to dedicate 6% of GDP to education remains unfulfilled; the NEP 2020 again refers to it. The policy states that *"the centre and the states would work together"* to expand public investment in the education sector to at least 6% of GDP *(NEP section 26.2).* It is ill-advised to assign equal accountability to the states, even though all policy directions originate from the union government and states are reliant on transfers of funds from the union government, and their alternatives for raising funds are limited. The union government must bear the responsibility of keeping this long-standing commitment to the flawless

implementation of NEP throughout the country. Budgetary bottlenecks at various stages of implementation and rigid guidelines imposed by the union government govern how states spend their available budgets. The central government's improper planning and design of schemes and a lack of provisions for monitoring are some of the major obstacles that prevent states from spending and resulting in inefficient expenditures.

The NEP's demand for private sector participants to fund public education at practically all levels—higher education, technical and vocational training, research and innovation—is a worrying endorsement. The NEP cites *"substantial investment …… as well as the encouragement and facilitation of true philanthropic private and community participation". (Principles of the Policy, p 5).*

The advancement of the private sector in the education sector not only raises new concerns, but the policy also intensifies existing ones with an unambiguous path to private sector promotion. With the stated intent *"to further enhance cooperation and positive synergy among schools, including between public and private schools, the twinning/ pairing of one public school with one private school will be adopted across the country …….and also share resources, if possible". (Section 7.10, p 30).*

The NEP does not mention minority institutions when discussing the lack of participation and access by linguistic and religious minorities in higher education.

Additionally, the policy states that it would look at ways to increase cost recovery without harming the needy or deserving groups, especially in the case of higher education institutions (HEIs). It might result in legislative changes that would make it harder for students who belong to SDGs to repay all types of student loans, perpetuating a cycle of debt, poverty, and vulnerability.

Although NEP acknowledged the need for HEIs to interact with the community, the detail is underemphasised as it requires establishing innovation centres should be actively sponsored by local and industry,

chances for scholarships to the brilliant and talented researchers by assessing only the research projects, not by curricular inputs and academic engagement with employers and study projects.

On paper, ending the M. Phil. programme seems like a wonderful idea. However, it can only succeed if the graduate and post-graduate degrees contain a required curricular element of research-based credits. These research projects should be evaluated with the same rigour and scientific approach as a good research project to develop, foster, and improve research techniques, methodology, and process among the aspirant researcher.

Long Way Ahead: India's Education Budget

According to the National Education Policy (NEP), public education spending should account for 6% of GDP by 2020. The education budget for 2022–23 should have been almost twice as large as last year to fulfil the 6% of GDP requirement. The actual amount in 2021–22 is 3.1% of the budget, contrary to the budget forecast.

- Of the total Rs 1,04,177.7 crore allotted for education in 2022, Rs 40,828.35 crore was designated for higher education, an increase of Rs 2,478.35 crore (only 6.46%) from the budget projection for the previous year.
- In reality, funding for certain initiatives, including the Higher Education Funding Agency (HEFA), has been cut. The HEFA funding has been cut to a pitiful figure of Rs 1 lakh.
- The Rashtriya Uchchatar Shiksha Abhiyan (RUSA) was given a budget cut, going from 3,000 to 2,042.95 crores. RUSA is a federally funded programme that assists state higher education institutions, particularly those prioritising education in underserved and aspirational areas.
- The budget for the PM e-Vidya programme, which is a part of the digital India e-learning initiative, was reduced from 645.61 crores to 421.01 crores for 2022–23.

- From Rs 250 crore in 2021–22 to Rs 127 crore in 2022–23, the financial provision for teacher training and adult education has significantly decreased.

Conclusion

The NEP 2020 focuses on improving a long-standing education system founded on Macaulayism while including innovative techniques for empowering and upskilling pupils to promote their overall growth. For the nation to advance and one day become a global power, it also strongly emphasises the development of educational institutions. The NEP 2020 will concentrate on providing students with the essential abilities needed in the contemporary environment. The student's subject options are quite flexible under NEP 2020, which is its strongest feature. The policy also mentions several internship options.

The NEP 2020 addresses the need for specialists in industries ranging from artificial intelligence to agriculture. India has to be ready for the future. The main goal of this strategy is to humanise education with a focus on disciplines connected to the humanities by introducing multi-disciplinary, inter-disciplinary, and trans-disciplinary methods. The NEP 2020 lays the path for less regulation and greater autonomy for institutions through a strong self-regulatory framework.

Aspirations to become a knowledge powerhouse of the globe incorporating the best of international educational initiatives are embodied in the New Education Policy-2020. Goal 4 (SDG4) of the 2030 Goal for Sustainable Development, approved by India in 2015, reflects the global education development agenda and aims to *"provide inclusive and equitable quality education and promote lifelong learning opportunities for everyone"* by 2030. Given that, it is implemented throughout the lengthy time it is intended for, the education policy is a step in the right direction.

India has New Education Policy to foster innovation and creativity. India's flagship programs such as *'Make in India'* are only driven by innovation,

'Aatma Nirbhar Bharat' relies on innovation, and the $5 trillion dream can only be achieved by innovation and research.

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Chapter 7

Achieving Employability Through Green Skills

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Ms. Ritu Rani

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Education plays an important role in making people self dependent. The process of education flows through two ways i.e. teaching and learning. Teaching means sharing knowledge with others while learning is an act of receiving knowledge through different sources. It covers both the aspects of teaching i.e. instructional as well learning. The aim of being educated is to live a happy life in society by adopting a source of income, maybe through jobs or being an entrepreneur. The mode of education is diverse and is being implemented through schools, secondary schools, senior secondary schools (elementary education), colleges (domain based) and universities (domain and research based). In simple terms, education can be defined as a social institution indulged in imparting academic knowledge, life skills, and socio-cultural norms important for the overall well being of human beings. The countries indulged in providing education on every level i.e. elementary, secondary and higher secondary and higher education are governed through certain education policies. These policies show the path to travel and accomplish the goals of education.

This chapter is an assessment of the National Education Policy-2020 which the government of India launched to improve the quality of education in India by opting and adopting various courses of action. The NEP 2020 will witness far reaching reformations in the education system in India through the milestones that has been set to accomplish.

It is well known that a country like India requires education policy on a regular interval because the dynamism of learning has been transformed in many folds. It has reached beyond the horizons of traditional classroom to online platforms and is still on the way of progressing gradually. The essence of learning has also been shifted from books to many online resources which give liberty to be accessed from remote locations. The technological aspect in the teaching learning process has proved to be instrumental in achieving the goal of education. The introduction of ICT in Education has really brought revolution in the teaching learning process; the original classroom teaching has now been replaced with virtual classrooms where students are attending the lectures by sitting at any convenient place with a sound network. It is indeed the need of the hour when pandemic has made everyone techno savvy leaving behind traditional mode of teaching. The pandemic 2020 opened the path of innovative teaching and learning aspects through online platforms and now it has become an essential and effective mode of imparting knowledge. The faculties indulged into teaching and learning exercise are now skilled in online teaching and evaluation procedure of the students.

This chapter highlights important provisions of NEP -2020; evaluates the strength of NEP -2020 in the perspective of vocational study and recommends the implementation of NEP-2020 for green skills under the vocational programme. This work is compiled through assessing secondary resources available in the form of books, literature, research articles, policies and papers published in different journals. The reviews and opinions of students, faculty members and other stakeholders were also referred to conclude the writing.

An Outline of NEP-2020

Every country in this world is governed by a certain education system that varies from country to country. Resources and funds essentially play an important role in the education system that needs to be utilized in creating infrastructure for the education system which we can say form the backbone for any country for its upliftment in every aspect i.e. technology, employment generation, betterment of its citizens, world recognition etc. Similarly, the government of India also has a vision to provide quality education for national development, to lead on the world platform in the terms of equality, economic growth, cultural preservation, social justice, scientific advancement etc. The flow of high quality education would mould our talented resources for the betterment of self (individual), societies, the country and of course the entire world.

The first score 21st century has witnessed its maiden education policy by the name of NEP-2020 which amalgamated sustainable development goals, revamping of existing educational structure and maintaining and preserving the legacy of world class institutions of ancient India. However, the fundamental principles of NEP-2020 focuses on the following:

1. To recognize, identify and foster the unique capabilities of each student
2. To achieve foundational literacy and numeric literacy
3. Flexibility in choosing the programmes
4. Multidisciplinary and a holistic education
5. Emphasis on conceptual understanding along with critical and innovative thinking
6. To promote life skills
7. To promote extensive use of technology
8. To maintain synergy in curriculum for all levels of education
9. To maintain a regulatory framework for all the levels of education
10. To promote outstanding research and development in education

NEP 2020 and Vocational Studies

Higher education plays an important role in promoting human well being along with societal development. It also contributes towards sustainable livelihood and economic development of the nation. The NEP -2020 also lays emphasis on producing good thoughtful, well rounded and creative individuals. To accomplish the goal, the provisions of study of one or more specialized areas of interest at a deep level and opt and develop capabilities from the wide range of disciplines available like science, social science, arts, humanities, language along with professional, technical and vocational studies are made and presented in NEP. It also prepares students for economic dependence and ensures the holistic development of individuals. The NEP-2020 is significantly important because it now has an orientation and approach towards a new education system which is multidisciplinary in nature and giving more emphasis on skill and value based activity from elementary education to higher education. It has been estimated that a multidisciplinary education system would ensure a holistic development of human beings in an integrated manner. Thus, NEP-2020 advocates such a holistic education approach at undergraduate level, including all professional, technology and vocational disciplines. The provision of flexible and innovative curricula has been assured at all higher education institutes which will be both credit based and project based where learners will be engaged with communities, service, environmental education and value based education. An effective learning requires a comprehensive approach supported by suitable curriculum, pedagogy, and assessment and student report. The curriculum will be designed in such a way that it will ensure the inculcating of the latest knowledge and meeting learning outcomes. To enable all students to succeed, the emphasis has been given for creation of more suitable resources and infrastructure; students discuss spaces and dining areas to create learning environments. It has been pointed out that the students passing 10+2 exams with vocational subjects are not in a position to continue with their vocational journey because of the undefined pathways. Hence, NEP-2020 can be proved to be a milestone

in mobilising students towards vocational studies in Higher Educational Institutes. It will also ensure quality vocational education and every child learns at least one vocational programme and gets skilling and up-skilling in the same for better livelihood. The provision of NCIVE has also been there to look into the matters of skill gap analysis and mapping of local opportunities to meet out the demand of manpower if any.

NEP-2020 for Green Skills

The UNWTO (United Nation World Tourism Organization) slogan for the year emphasises on tourism for inclusive growth, similarly, NEP-2020 can also be considered as an education plan for inclusive growth. When it comes to implementing NEP-2020 for vocational studies, the tourism domain comes first in itself. Green Skills are 21st Century mandatory skills that foster a mutual relationship between human and their environment for preservation of eco system and conversation of natural resources leading to sustainable progress of the nation. Tourism is one of those sectors that talk about a green economy with sustainable tourism development which exists in the name of social, economic and cultural environment. When it comes to raising the question for up-skilling of green skills specifically for tourism students, it would be justifiable to mention that tourism is one of the world's leading job generators and often needs skilling of youths, women and migrants for better employment. Tourism provides employment in related areas such as energy, water and waste services. The curriculum which is supposed to be introduced in vocational studies, therefore, must focus on the following:

1. Priorities for Skill development.
2. Training of local unskilled and semiskilled staff, and reorientation and training of cottage industries and small and medium-sized enterprises (SMEs) that provide related products and services in the Tourism and hospitality sector.
3. Training and reorientation of managers and owners of related tourism enterprises dealing with the tourism and hospitality sector.

4. Integration of green oriented curricula for tourism-related programs at technical and vocational education and training (TVET) and higher education level.
5. The existing qualifications framework (QF) can be integrated with green skills in education and training programs and curricula for vocational studies. Since a QF essentially links qualifications with the actual skills needed in a particular workplace, green skills can be transformed into specific competencies that can feed into competency-based training modules or curriculum designs, as well as into assessment and certification mechanisms. Integration of green skills in the QF will also strengthen workers to incline towards green jobs and green sectors. In a holistic quality framework that reflects a school level to higher education continuum, generic or basic green skills can already be integrated in the school education values and attitude formation components that include appreciation for and protection of nature and the environment.
6. A quality assurance (QA) mechanism for skills development is based on curricula, programs and institutions, trainers and assessors and assessment and certification. Integrating green skills standards is badly required. In both QF and QA, collaboration among key partners, i.e., government, industries, workers' representatives, and education and training institutions, is in pathetic condition in identifying the skills needed for vocational students.
7. Synergy across the education sector is utmost required. The attributes such as awareness to environmental protection are best to be developed during elementary education.
8. In pursuing skills development for green jobs, essence like formulation and implementation of strategies and plans, the more emphasis should be given for generating equal opportunities for women, youth, and the marginalized.
9. Orientation towards Education, Skills and Sustainability is more important because skills, attitudes and behaviour play an important role in sustainable and inclusive growth. As per United

Nations 2015, the Agenda for Sustainable Development requires an inclusive response of human capital development, talent solutions, and education and training in achieving its objectives set for 2030.

10. The combined concept of "sustainable and inclusive growth" needs to be more highlighted because the growth and sustainability has based on three pillars i.e. environment, society, and the economy.
11. Hospitality and tourism industry is one of the largest service industries in India which contributes 6% of the total national GDP and 9% to total employment. It has been placed in the concurrent list that makes it one of the priority sectors for the government and industry. The issue of environmental sustainability is critical when it comes to developing tourism. Some of the highlighted green skills that the tourism and hospitality sector is actively in quest of are recycle, reuse, and reduce fuel consumption in tourist operations; disposing of non-biodegradable garbage in a responsible way (responsible tourism); procuring green materials; encouraging to replace polythene bags with that of paper bags or cloth bags and to use eco-friendly cleaning chemicals in the accommodation sector. Some other emerging roles and green jobs that tourism and hospitality sector is offering are home stay owners and operators, nature guides and interpreters, heritage interpreters, rural, water and hill adventure guides, security guards actively over destinations, tourist vehicle drivers indulged in providing pick up and drop along with covering sightseeing. These areas also need to be explored for green jobs and green skills for which special curricula need to be designed.
12. Integrating green skills development policies with that of policies related with Industry, economic, and environment.
13. Green practice standards can also be included in the industrial policies of new economic corridors. Further, they can communicate widely and strongly the benefits of adopting sustainable practices and up-skilling the existing workforce in SMEs through existing supply chains. Models of green innovation, as well as green skills

development, may be rewarded and recognized through initiatives supported by CSR funds and also may be patented.

14. Initiate Easily Implementable Activities around Green Skills Generic skills in training are easy to introduce and can have a progressive path to specific skills and courses. Content related to sustainable practices and climate change issues can be introduced into existing curricula, not only in TVET institutions but also through school education and higher education institutions. Major government-funded training schemes such as Aajeevika Skills (National Rural Livelihoods Mission) and the STAR scheme (NSDC) can include a number of "green" occupations in their training priorities. Higher education institutions may also take the lead in the professional development of trainers through in-service training using special modules on green skills. The teacher training programs and courses can also start including generic and specific green skills modules. These can be included as accreditation requirements for training programs. MHRD may establish a green benchmark for teacher training programs. The key responsibility is with the Ministry of Skill Development and Entrepreneurship (MOSDE) along with NSDA, NSDC, CII, and FICCI.
15. Increased Coordination and Rationalization of the Private and Government Training System Training by the private sector cannot be ignored. While reforms in government TVET are being led by the line ministries, reforms in the private sector can be pushed through industry and employers. Parity in quality of training, incentives, governance systems, and industry relevance is required between the two. In addition, the state should create a framework to accredit and recognize the different forms of vocational training undertaken by different private industries. While institutional initiatives are quicker to implement, large-scale reforms may also be initiated simultaneously. For example, MOSDE can develop green skills standards and dovetail them with the NSQF and National Occupational Standards (NOS). The NSDC may add "green skills" criteria in the validation process for NOS. 1 India

51 Training providers can also be collocated with the industry to improve the relevance of training, improve teacher industry experience, offer research and development opportunities, create more responsive delivery arrangements, and foster industry skills development clusters. The key responsibility is with MOSDE along with NSDA, NSDC, and large private sector corporations. Enterprises offering green skills development training should be entitled to general incentives concerning vocational training under government regulations or be allowed to recover training expenses through users or sponsoring institutions. Also to be engaged are the Ministry of Industry and Commerce; Ministry of Corporate Affairs; Ministry of Heavy Industry and Public Enterprises; and Ministry of Micro, Small and Medium Enterprises.

16. Promote Green Practices and Sensitivity toward Sustainability as a Social Issue. Green skills development should be understood not only as a matter of curriculum, and, in terms of content, limited to TVET institutions, but as something that should be built into a larger ecosystem of education, workplaces, social interactions, and political debates.
17. The more emphasis is on the scope of green jobs and green skills wide spread from Informal to Rural Sectors. While most engagement between industry and the government with respect to sustainable growth is limited to the formal and organized sector and addresses mainly urban issues, research and policy must also generate evidence on the need for and situation of environmentally sustainable jobs and skills with respect to work in the informal economy such as small-scale manufacturing, trading, art and craftsmanship, and related to work in rural areas, especially agricultural processing and other nonfarm-related work.

Conclusion

The success of any policy and planning finds its foundation in the effective implementation and monitoring. No doubt, the NEP 2020 will prove to be a

milestone for all the reformations in the education sector and is set to achieve all its targets by 2030- 40. However, a very effective implementation strategies are required at every stage and for every level of education to make it a grand success. Since green skills are inextricable for the survival in 21st century for the prosperity of nation and entire globe, therefore, their inclusion in the education system through an array of resources would ensure progress and development of green economy that would connect environment, natural resources and society in a holistic way. This chapter focuses inculcating those skills from the very beginning among the students and citizens, thereby, empowering them with relevant green skills for the green economy at the onset of education system for the sustainable growth of the nations at large.

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Chapter 8

A Conscious Stride Towards Holistic Development Through Value Based Education

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Introduction

In an age of machine learning and artificial intelligence, Life skills are becoming extremely critical to touch base with humanity. The objective of education is not just to impart knowledge but to unleash the core competencies of an individual, development of an all-round personality, empowered with the virtue of compassion, empathy, resilience, creative imagination and scientific temperament as envisaged by the constitution makers of India. Value-based education cultivates the aspects of holistic personality development which include; physical quotient, Intelligence quotient, Emotional quotient and social quotient. Value-based education emphasizes building a conducive learning environment that not only is responsible for developing good moral values but social and relationship skills along with academic achievements which is a need of the hour in this age of blind race and cutthroat competition. This fresh perspective of education fosters and maximizes the potential of an individual to enable them to contribute to the best of their capabilities as global citizens. Dr. Neil Hawkes, the founder of Value based education states:

Our world so desperately needs hope. Value-based education is bringing this hope through a transformational movement that has the potential to transform education and society so that we can live in peace and harmony with each other; ensuring the sustainability of our planet.

The National Education Policy 2020 places paramount importance on value-based education. It promotes an ecosystem for inclusive holistic development, Bharat-centric education, development of a knowledge-based society and emphasis on knowledge-based education. The focus is, where students will inculcate the values from an early age and be prepared before they enter college. They will be provided better opportunities to explore their passion and interests. Their communication skills, teamwork and resilience will be enhanced.

The present chapter thus delineates around the following key areas that focus to underline the importance of Value based education in India; explain the need for value-based education; provide framework to understand the

proposed model of value-based education in NEP-2020 and ultimately discusses the way forward towards the implementation of value-based education in Indian context.

Value-Based Education and its Significance

Nelson Mandela once said, "Education is the most powerful weapon through which one can change the world."

Holistic development or all-around development of personality gives an upper edge in this cutthroat competitive world. It's a critical component that influences moral, ethical, social, cultural and spiritual principles that are required for holistic development. Holistic education is based on a holistic vision of life which is a comprehensive and unifying framework for all human beings. Holistic value-based education involves:

- Education on values rooted in a holistic and humane world vision that is reinforced by the examples, courses and case studies of local, regional and national values.
- Behavior for mutual fulfillment, team work, cooperation, science technology management for mutual prosperity, service (Sewa) which promotes harmony in family and society and meaningful participation in the family, neighborhood, institute, community and all the way to the nation and beyond.
- Value based education enriches the students with social, interpersonal and life skills to thrive and adapt in the changing scenarios. It contributes to their overall wellbeing and develops strong character and moral values. Value based education is important in many ways and therefore, it becomes the need of the hour also because:

1. It helps in developing positive attitude among students. A sense of direction and sense of identity is imparted through value based education.
2. Through value based education students develop both personality and character. The integration of soft skills and life skills in the

curriculum nurtures the possibilities of the students and helps them in realizing their potential to maximize it further.

3. Value based education helps students become sensible and socially responsible citizens which helps nation fight against all kinds of evils such as religious extremism, violence, corruption, dishonesty, exploitation and drug abuse. Curricula in educational institutions are responsible to develop key qualities like regularity, punctuality, cleanliness, self control, duty to serve, responsibility, enterprise, creativity etc.
4. Value based education focuses on environmentally responsible work and promotes the same sensibility to make environment conscious citizens.
5. It also reinforces ethical human conduct and fosters appreciation for excellence and practicing gratitude in general.

Need for Value Based Education

Despite the spectacular achievement of human civilization in the arena of science, technology and medicine, the serious concern is that human values are diminishing and losing its sheen day by day. The increasing rate of suicides, struggle to co-exist in a harmonious environment and the rapid rise of crime in society remain clearly evident owing to the dirth of human values. Education plays a vital role in it. Especially in ancient India value based education has always held a paramount importance. From the *Gurukulas* to universities like Nalanda and Takshashila, ancient Indian education system paved the path for the world. The education in India was born of this vision that each human being carries a spark of divine and realizing and working towards harnessing the best of human potential was the objective of education. Values such as cultural values, universal values, human values, societal values, national integration and character building were fostered among the students at an early age. But gradually it has seen its decline. In today's times the lacuna of education system lies in the following:

1. Unleashing of human potential has not been clearly defined.
2. Not much importance is attached to human values. Good moral character and all round development of personality is not given priority in educational system.
3. The content of education clearly misses the holistic aspect of it.
4. The pedagogy for communicating and imbibing holistic content is not clear.
5. Team work, collaboration between individual and teams is largely missing.
6. The environment in the family/ society/college is not conducive. The major focus remains on earning a livelihood than inculcating the value system.

Keeping the need in mind, revolutionary ideas have been proposed in the new education policy to keep value based education in forefront. The policy proposes rampant changes to revamp the educational structure which is aligned with the aspirational goals of the 21 century while building upon India's traditional value system.

The Proposed Model of Value Based Education in NEP-2020

The National Education Policy is going to provide an ecosystem for the value based education which will bring paradigm shift in the education system in the following manner:

All Inclusiveness	Development of holistic education	Bharat centric education	Development of knowledge based society	Emphasis on knowledge based society
Involvement of village Panchayats headed by Mr. Kasturirangan in the process of drafting the NEP	To eliminate the stress of exams and early dropouts, the concept of gaming education has been introduced	Global world and Bharat centric values to be inculcated by students by blending culture and languages	To impart practical and skill based knowledge	Unleashing and identifying the unique capabilities of students

Continued…

All Inclusiveness	Development of holistic education	Bharat centric education	Development of knowledge based society	Emphasis on knowledge based society
Approximately 2 crore students joining back to educational institutions through NEP	At preparatory level emphasis on activity based learning with preference for regional Indian languages			Focus is laind on Foundational literacy to be provided to each student by grade 3
To attain inclusiveness, replacing 10+2 structure with 5+3+3+4 by including Anganwadi and Pre schooling	Development of critical thinking skills and skill development at secondary level (class 9-12)			Adapting learner centric and multidisciplinary approach
National curricular and pedagogical system for early childhood care designed by NCERT to be follwed				Implementation of social impact value based education
Life skills, project based learning and inclusion of technology and vocational learning				Prioritizing vocational programs
				Integration of knowledge and providing flexibility to learners

All Inclusiveness	Development of holistic education	Bharat centric education	Development of knowledge based society	Emphasis on knowledge based society
				Allowing equal access to knowledge

Table 8.1: The Proposed Model of Value Based Education in NEP-2020

Challenges and Way Forward Towards Implementation

The implementation of National Education Policy 2020 seems to be a mammoth task due to various factors involved in it which are as following:

- **Size and diversity**: One of the major hurdles in the implementation of the policy remains the size of the population and diversity. India remains the second largest education sector in the world with more than 15 lakh schools, 25 crore students and 89 lakh teachers. As per the AISHE report, India's higher education comprises 3.74 crore students in nearly 1000 universities, 39, 931 colleges and 10,725 stand alone institutions. Thus a countrywide implementation of this mega education policy will be an uphill task involving multiple stake holders at the state, district, sub district and block level. This will require a shared responsibility and ownership amongst key stakeholders at both state and district level. In private sector, extraordinary diversity is going to be another major challenge for the leadership.
- **The nature of values:** The term *'value'* is heavily loaded and itself poses challenge for scholars. Generally the term value is associated with religious values. Religious scriptures lay stone to the guiding principles of life. But in the context of modernity and modernism, the fundamental question lies whether these values are required at modern state or not. Many scholars advocating this view believe that modern secular values such as equality, honest, democracy, respecting human rights, respect to others must be cultivated in the 21 century and not the outdated religious principles. This is a

topic of debate. Deliberations are required to bring clarity in terms of accepting and understanding what is important and relevant in present times and what is superfluous and redundant, thereby, providing a set of values, that could be universally postulated for following. Or a flexible approach to be provided to teachers and educators wherein they could curate and design their set of values and draw an outline for nurturing those values amongst the students, in accordance with the requirement of that particular set of value at a particular time and context which might differ in accordance with age group, cultural and regional settings of that place wherein education is imparted.

- **Methodology of imparting the value system:** There are various hurdles related to the methodology of inculcating the value education. At school level, it's relatively easier but at the college level, the identification of the value system, effective designing of the curriculum and pedagogy may create challenge. It also requires commitment on the part of the teachers in the implementation of value education in letter and spirit as teachers form their own ideology over the period and influence students. Only delivering lectures and screening films on value education may not suffice. It requires supreme dedication, interaction and commitment on the part of educators. In Tamilnadu, especially in aided colleges, the government has introduced the value education as a compulsory scheme at the undergraduate level but the variation of syllabus in other university and the scrutiny of it pose challenges. In many instances, teachers are not adequately trained to impart value based teaching. And as Nietzsche puts it, the society requires masters to create and impart values, not the slaves who accept all the values imposed on them without any critical understanding.
- **Way forward:** To overcome the challenges in the way of seamless implementation of National Education Policy, Government has proposed a roadmap with immediate effect.

To address the operational challenges, state government bodies are collaborating with district and local bodies including Panchayats. The objective will be to define rules and regulations for private educational institutions. Schemes such as samagra shiksha have been rolled out. For institutional structuring and consolidation, a rationalized framework is in place.

Capacity building programs such as nodal centres in universities, faculty development programs, short term training programs, online programs to train and master faculty members have been initiated by National Council for Teacher's Education, DGT, NSDC. Along with that state level mentorship scheme and identification of mentor institution are in place to give autonomy to the affiliated colleges.

A shift in curriculum and pedagogy is initiated to give place to experiential and activity based learning in place of rote based learning. Upgradation of physical and digital infrastructure are ongoing to provide more space and resources to the learners.

Conclusion

In a nutshell, National Education Policy 2020 has the potential to transform the Indian Educational landscape if implemented in letter and spirit. A bottom up approach and working at grassroots level can bring a definite change in the mind of all stakeholders which requires a shift from 'what to think' to 'how to think.' Funding and scaling the new lucrative model for teachers will resume interest in the teaching profession which is waning day by day. Value based education can certainly bridge the gaps and lead towards inclusive and holistic society with an aim to make learners future ready and essentially instill the quintessential virtues of humanity which will be a stride towards making India a world leader in times to come.

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Keyterms

Multilingualism: Multilingualism is speaking, writing and understanding more languages along with the mother tongue or native language.

Multiple Entry and Exit System (MEES): NEP proposes that student can drop any course after completing one year or two semesters and join in any course based on his/her interest while pursuing higher education degrees.

Pedagogy Subject: Pedagogy is the Science of teaching. Teachers need to train the methodology and science of teaching for effectiveness in the classroom. Students can learn various skills of teaching while practicing their subject method.

National Curriculum Frame Work: This committee constructs, revises and evaluates the curriculum in various degree courses in a nation wise uniformly in all states.

Anganwadi: Anganwadi is a preschool arrangement for rural children to make them educated and literates.

Balvatika: Balvatika is a preschool, following the play way method for making the children learn the concepts and socialize to school in a conducive and congenial environment.

Ekalavya Model Residential Schools (EMRS): These schools are established for the rural Scheduled Tribe students and encourage their talents to make them professionals and ready for the future employment.

National Education Policy: NEP is based on 22 essential principles, it serves as a framework

for the education system and institutions. It aims to develop good, thoughtful, well-rounded, and creative individuals at quality educational institutions where they will be able to study one or more specialized areas of interest at a deep level, as well as develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, a spirit of service, and across a range of disciplines, including sciences, social sciences, arts, humanities, and languages.

Education: Education is a long term process of self transformation and recognizing of ones full potential. It starts from an early age wherein learning is imparted to pupil through providing environment wherein he/she naturally acquires the lessons or through a set of instructions that require conscious efforts. This is one of the paths and methods of attaining self-realization.

Vocational Studies: These courses and diploma programmes are focused on enhancing the professional competencies of individuals. They focus on the jobs training and skill building, henceforth equipping students with appropriate practices enabling them to earn their livelihood.

Skill Training: Tackles unemployment and underemployment. These courses aim to hone and upskill the students and trainees for specific job and work profile.

Employment Avenues: NEP will highlight some underrated sectors that are promising in terms of employment opportunities. These avenues would open gateways for workforce.

Skill Manpower: Competent and educated sections of the workforce. They are trained and skilled people who serve in capacity of being mentors, teachers to train and empower the students.

Virtual Lab: Virtual labs are simulation based remotely accessed interactive online labs provided for effective learning in various disciplines of science and engineering.

AI/ML Technology: It is integration of Artificial Intelligence (AI) and Machine Learning (ML). It represents an important evolution in computer

Science and Data Processing that is quickly transforming our day-to-day activities.

Computer Aided Learning: CAL is the short form commonly used for Computer Aided Learning, mostly used in Education environment. It is a program or an application that is used to assist the user in learning a particular subject.

DIKSHA: Stands for digital infrastructure for Knowledge sharing. It is a National Teachers Platform which is currently being used by teachers and students across the nation to provide school education through distant mode. It is an online national portal of India – www.india.gov.in/spotlight/DIKSHA.

NISTHA: means National Initiative for School Heads and Teaching Holistic Advancement. It is a capacity building Programme for "improving Quality of School Education through Integrated Teaching Training". It aims to build the competencies among all teachers and school principals at the elementary stage. It is the world's largest Teacher's Training Programme.

Global Education Agenda 2030: Refers to the global commitment of the "Education for All" movement to ensure access to basic education for all. It is an essential part of the 2030 Agenda for Sustainable Development.

Policy Document: A formal document prepared to list the vision, plans and methods of large scale changes required by stakeholders.

Assessment: The act of inferring performance based on pre-determined scales for assisted learning through feedback.

Indian Education: Institutes, stakeholders and educational aspirations of Indians and its manifestations.

Higher Education Institutions: Educational institutions that provide higher education, training, and research direction to students. These institutions can be research-intensive universities, teaching-intensive universities, or independent, authorized colleges. It can be defined as

interdisciplinary institutions of higher learning that provide high-quality teaching, research, and community participation for undergraduate and graduate programs.

Teacher: is a facilitator, traditionally called a *Guru,* who is a torch bearer acting as a catalyst in bringing the required changes in a student/disciple through imparting theoretical and practical knowledge, lessons, revelations, insights and truth about the subject and domain. Teacher is attributed with various skills, abilities, competencies and knowledge pool that makes him/her Master of a field.

Training: refers to a set of drills and activities that are being designed to train students for a specific job or work. It has a set of instructions and practical exposure through hands-on-learning and experience that make students industry and market ready.

Self-realization: Educators propound that self-realization is the ultimate goal of education. Through the path of gaining knowledge and wisdom, one attains and realizes ones complete potential and knows the very purpose and significance of human birth. The ultimate question, "Who am I" is being known to the aspirant, who realizes his/her true self.

Goal: refers to those aims and objectives that are being set by individuals, organizations and nations to be achieved within a specific duration of time that are in alignment with their vision.

Green Skills: These refer to a set of skills that are inclusive of ones talents, natural abilities, knowledge and domain expertise to support economic, environment and social outcomes of a nation, thereby ensuring their sustainability and green economic growth.

Green Economy: visions and aims to provide a very high quality life to its citizen by promising a culture that uses green skills and habits that are environment friendly, promising effective use of natural resources.

Education Policy: refers to the guiding concepts and choices made by policymakers that have an impact on educational practices. It

includes all of the laws that regulate the establishment and operation of educational institutions.

National Research Foundation*:* It is the planned foundation that would connect the government with departments to infuse and develop a research culture in institutions. It will incentivize and recognize outstanding research by seeding and growing research at state universities and other public institutions in all disciplines competitively. It will provide a reliable base of merit-based but equitable peer-reviewed research funding acknowledged and implemented via tight links with government, business, and private/philanthropic groups.

Research Internship*:* A research internship is a professional learning experience that provides meaningful, practical work in a student's subject of study or career interest. It will help students explore careers, build skills, get experience on how to do high-quality research and give them hands-on experience with tools, methods, approaches, and equipment.

Holistic Education: Holistic education is the comprehensive approach to teaching where educators seek to address the emotional, social, ethical and academic needs of students in an integrated learning format. The core philosophy is to educate the whole person beyond academics to enable them to develop an understanding for the global events around them and make them compassionate.

Value Based Education: is an approach to teaching which emphasizes on values. The major focus lies on creating a strong learning environment which not only enhances academic achievements but also develops the social and relationship skills of the students inculcating positive attitude and right value system to get on in this world.

Bharat Centric Education: It focuses on the holistic and overall development of the students to make them *Atam nirbhar* and enable them to compete with the world while maintaining the *bharat centric* values and culture.