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Education

Introduction

"Education is the most powerful weapon you can use to change the world" - Nelson Mandela According to UNESCO, education is the process of facilitating learning, or the acquisition of knowledge, skills, value, beliefs, and habits. It is a discipline concerned with methods of teaching and learning in schools or school-like environments. The most important role of education is to facilitate social and economic progress.

Education, in its broadest sense, is the most crucial input for empowering people, especially youth, with knowledge and skills which will help them in gaining access to productive employment in the future.

All individuals are entitled to an education. Education leads to individual freedom and empowerment, which in turn yields significant social development gains and makes an individual self-reliant.

Education is seen as the foundation of a society, enabling social prosperity, political stability and economic wealth. Education is therefore increasingly being viewed as the most basic right across the globe which is also essential for exercising other human rights.

Various Constitutional Provisions

In order to understand the importance of education and also in order to implement education in a more prudent manner, some provisions have been adopted in our Constitution and are discussed below:

Fundamental Rights

1. **Article 21A:** Right to elementary education.
2. **Article 28:** Freedom from attending religious instruction or worship in certain educational institutions.
3. **Article 29:** This article provides equality of opportunity in educational institutions.

4. **Article 30:** Right of minorities to establish and administer educational institutions of their own.

Directive Principles

1. **Article 41:** Right to work, to education and to public assistance in certain cases.
2. **Article 45:** Provision for free and compulsory education for children and provision for early childhood care and education to children below the age of six years.
3. **Article 46:** It provides for special care to the promotion of education and economic interests of the scheduled caste, scheduled tribes and the weaker sections of society.

Fundamental Duties

1. **Article 51 A(k):** A parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years.

Other Articles

1. **Article 337:** This provides for special provision with respect to educational grants for the benefit of the Anglo-Indian community.
2. **Article 350A:** This article relates to facilities for instruction in mother tongue at primary stage.
3. **Article 350B:** It provides for a special offer for linguistic minorities.

Amendments:

1. **42nd Amendment Act 1976:** Education was shifted from State List to Concurrent List
2. **86th Amendment Act 2002:** Right to Education (inserted 21A and 51k)
3. **93rd Amendment Act 2006:** Amended Article 15, which provides reservation for SC, ST and OBC in private institutions. (including self-financed but excluding minority educational institutions and it also nullified Supreme court's judgment in Inamdar case that

State cannot impose reservation on private unaided institutions.

Right to Education Act

Education sharpens our innate abilities and converts them into responsible citizens. It is, therefore, necessary that the parents and society should protect the child with the utmost care and provide them education. A very conducive environment, free from hunger, disease, and oppression needs to be ensured for children in which they can have the full opportunity to grow in full bloom. The enactment of the Right of children to free and Compulsory Education (RTE) Act, 2009 in India was an important step and defining event in that direction.

Article 21-A and the Right to Education Act came into effect on 1st April 2010. The title of the RTE Act includes the words 'free and compulsory'. 'Free education' implies that no child, other than a child who has been admitted by his or her parents to a school which is not administratively or financially supported by the government, will be liable to pay any kind of fee or expenses or charges which may prevent him or her from pursuing and completing elementary education. 'Compulsory education' makes it obligatory for the appropriate governments and local authorities to provide and ensure admission, attendance and completion of elementary education for all children in the 6-14 age group.

With this Act, India has progressed towards a rights-based framework that makes a legal obligation on the State and Central governments to implement this fundamental right of a child, as enshrined in Article 21A of the Constitution, in accordance with the provisions of the Right to Education Act.

Some of the important provisions of the Act are:

1. Free and compulsory education to all children of India in the age group of 6 to 14 years.
2. No child shall be held back, expelled or required to pass a board examination until the completion of his/her elementary education.
3. If a child above 6 years of age has not yet been admitted in any school or could not complete his or her elementary education, then he or she should be admitted in a class appropriate to his or her age. However, if a case may be wherein a child is directly admitted in the

class appropriate to his or her age, then, in order to be at par with others, he or she should have a right to receive special training within such time limits as may be prescribed. It is provided further, that a child so admitted to elementary education will be entitled to free education till the completion of elementary education even after 14 years.

4. **Proof of age for admission:** For the purpose of admission to elementary education, the age of a child shall be determined on the basis of his/her birth certificate issued in accordance with the provisions of birth. However, no child will be denied admission in a school for lack of age proof.
5. A child who completes his/her elementary education shall be awarded a certificate.
6. A fixed student-teacher ratio needs to be decided.
7. Twenty-five per cent reservation for economically disadvantaged communities, for admission to Class I in all private schools, should be undertaken.
8. School teachers should possess adequate professional degrees within five years or else they would be suspended.
9. School infrastructure (wherever there are issues) should be improved every 3 years, else recognition will be cancelled.
10. Financial burden shall be shared between the state and the central government
11. It prohibits (a) physical punishment and mental harassment; (b) screening procedures for admission of children; (c) capitation fee; (d) private tuition by teachers and (e) running of schools without recognition.
12. It provides for the development of curriculum in consonance with the Constitutional values, in order to ensure the all-round development of the child, with a focus on building on the child's knowledge, potentiality, and talent and making the child free of fear, trauma, and anxiety through a system of child-friendly and child-centered learning.

Issues associated with RTE:

Over the years many basic issues and implementation challenges have emerged in the Right to Education Act, 2009. Some of the important issues are discussed below:

1. **Why only 6 – 14; why not 0 – 18 years:** The Act allows only children between the ages 6-14 to get the right to education. It leaves out younger kids (0-6) and the older ones (14-18) despite the fact that India is a signatory to the U.N. Charter that states clearly that free education should be made compulsory for all children up to the age of 18 years. Education up to the age 14 is not at all sufficient for a person to lead a minimally decent life.
2. **Out of school children – gender bias:** In the RTE age group, the traditional gender norms force girls into helping with household chores and taking care of younger siblings. This leads to irregular attendance and eventual dropouts. The culture of early marriage, lack of security in schools and low aspirations of educating girls also pushes them out of school. Of those who manage to stay in school till 14, about 1/3 do not enroll further. One probable cause for them seems to be the fact that only 14% elementary schools (classes I to VIII) in rural India offer secondary grades (IX and X) and only 6% offer (classes XI and XII).
3. **Children with special needs (CWSN) left out of RTE:** The Right to Education Act, 2009 has no provision to provide education to children with disabilities – more correctly, children with special needs (CWSN).
4. **Status of poor kids in private schools:** The RTE Act, 2009 opens the doors of private schools for children from weaker backgrounds. But the main challenge comes from the attitude of private school administrators. Moreover, there are no provisions to bear the overhead expenses such as uniform, books, stationery, etc. of children attending a private school.
5. **The RTE Act appears mostly input oriented with little focus on quality of learning:** The Right to Education Act is perceived to be excessively input-focused rather than oriented towards outcomes. Although it guarantees universal admission of children, but it does not promise quality delivery of education.
6. **Even though the Act** stipulates that children missing out on education years should be admitted to classes based on their age, but it does not lay out the details for the creation of a bridging course to ensure that students are taught the subjects they missed and are able to adapt to the new classes.
7. **The Act requires every** government and aided school to form a School Management Committee (SMC) which shall mostly be comprised of parents and will be responsible for planning to manage the operations of the school. However, this can be a burden for the poor parents who would not be able to volunteer their time and effort as is expected from SMC members

Major Amendments to RTE Act

- ➔ In order to focus on quality education, the Central government has amended the RTE Rules to include the reference on learning outcomes based on classes and subjects. These would serve as a guideline for States and UTs to ensure that all children acquire appropriate learning levels. The RTE Act, 2009 was also amended in 2017 to ensure that all teachers acquire the minimum qualifications prescribed under the Act by 31st March 2019.
- ➔ This amendment scrapped the “no detention” policy, which ensured that no student could be held back (or failed) in a class until the end of elementary education (that is Standard 8th). The government is placing a lot of emphasis on the development and provision of e-content for students and also training of teachers, headmasters, and Principals.

National Education Policy

- The first National Policy on Education was framed in 1968 and then in 1986, which was later modified in 1992.
- Since then several socio-economic-cultural changes have taken place which call for a revision of the policy.
- The Government of India has therefore, brought out the National Education Policy, 2020, to meet the changing dynamics of the people's requirement with regards to quality education, research and innovation, aiming to make India a knowledge superpower. The policy also aims to eliminate the shortage of manpower in science, technology, academics, and industry and to equip all students with the necessary skills and knowledge.
- The need for the new educational policy was to address some of the key challenges in the education sector. Research from around the world has highlighted the importance of early childhood education. Yet, participation in pre-school education in India has remained low. Unsatisfactory learning outcomes due to poor quality of education are also a matter of great concern. India is one of the youngest nations in the world with more than 54 percent of its total population below 25 years of age.
- This makes it necessary for the youth in the country to be equipped with the skills and knowledge to enter the workforce through adequate education and training. Still, the institutional arrangements to support technical and vocational education programmes remain quite insufficient.
- There is also a growing realization about the existence of a serious disconnect
- between the prevailing school and higher education syllabus and the curricular thrusts that are actually needed for promoting the acquisition of relevant skills by students, to get decent work and live a better life in a rapidly changing world.
- Also, the use of Information and Communication Technology (ICT) in education remains limited and there is a need to accelerate efforts to use ICT for

fostering quality education. The current teacher education and training programmes are also inappropriate in terms of equipping the teachers with the competencies required to carry out their duties in diverse social, economic, cultural and technological environments.

- Though there have been substantial gains in pre-school enrolment, children from disadvantaged population groups still lack access to pre-school education. Further, children from economically disadvantaged groups are more likely to receive less opportunity to enroll for pre-primary education. Several studies have reported that the challenges in education governance are exemplified by teacher absenteeism, delayed flow of funds to schools and administrative incapacities. Capacity constraints relating to effective programme planning and implementation continue to be a key issue.

The draft National Education Policy (NEP), 2016 was based on the T.S.R. Subramanian report. However, NEP 2020 is based on recommendations of both Kasturirangan and T.S.R. Subramanian committees. It lays emphasis on reforms in education at all levels from pre-primary to higher education. It aims to bring transformation in the education system of India in line with contemporary needs. NEP, national education policy 2020 will replace existing education policy which was formulated in 1986. Considering vast changes in technology, demography and aspirations of people, this reform is the need of the day. It also aims to address current challenges Indian the education system faces like lack of resources, capacity, mismatch between education and skills needed for jobs.

Major Provisions Of NEP, National Education Policy 2020

School education:

1. Universalization of education by 2030 through 100% GER (Gross Enrollment Ratio) from pre-primary to secondary.

2. Open schooling system (no admission requirements, NIOS is example) for out of school children.
3. 5+3+3+4 curriculum system replacing existing 10+2 system.
 - a. 3-8 years of age: 3 years pre-school education + Classes 1 and 2
 - b. 8-11 years of age: classes 3 to 5
 - c. 11-14 years of age: classes 6 to 8
 - d. 14-18 years of age: Classes 9-12
4. Focus on foundational Literacy and Numeracy; extra-curriculars; vocational education and multidisciplinary approach to arts, science and commerce in high school
 - a. Vocational education to start from class 6 with internships
 - b. Curriculum will include 21st century skills like coding.
5. Teaching in mother tongue upto class 5 with no imposition of any language.
6. 360-degree holistic progress card for tracking learning outcomes.
7. Teacher education:
 - a. 4 year B.Ed. qualification to be mandatory from 2030 for teachers
 - b. National Curriculum Framework for Teacher Education, NCFTE 2021 to be formulated
5. National Research Foundation(NRF)as an apex body for research capacity building.
6. HECI (Higher education commission of India) as umbrella regulator except for legal and medical education. It will have four verticals of:
 - a. National Higher Education Regulatory Council (NHERC) for regulation
 - b. General Education Council (GEC) for standard setting
 - c. Higher Education Grants Council (HEGC) for funding
 - d. National Accreditation Council (NAC) for accreditation
7. Phasing out affiliation system in 15 years
8. Graded autonomy to colleges will be provided as per a stage wise mechanism.

Other:

1. Increasing public expenditure on education (Centre and states) to 6% of GDP at the earliest.
 - National Educational Technology Forum (NETF)to promote use of tech in education – learning, assessment, planning and administration
 3. Gender Inclusion Fund for advancing gender equality in education.
 4. Special education zones for disadvantaged regions and groups. Financial incentives will be given to SC, ST, OBC and other disadvantaged groups.
 5. Promotion of multilingualism in schools and colleges.
 6. National institutes for Pali, Prakrit and Persian to be set up along with institutes for translation and interpretation, for knowledge creation in Indic systems and languages.
- It recognizes the importance of preschool education in the future of a child through 5+3+3+4 structure. It also recognizes the importance of mother tongue upto class 5, which has an impact on learning outcomes for the child. In the context of increasing demand for English as a medium of instruction, this brings balance by not neglecting the mother tongue. It promotes multilingualism which is proven to have a positive impact on brain development.
- Higher education:**
1. GER to be raised to 50% by 2035.
 2. Broad based, multi-disciplinary, holistic UG (Undergraduate) education: Provisions of flexible curriculum; integration of vocational education; multiple entry and exit points with respective degrees; UG education period between 3-4 years
 3. Academic bank of credits to enable transfers of credits between institutions
 4. Multidisciplinary Education and Research Universities (MERUs)for global quality multidisciplinary education

It also emphasizes that vocational education since class 6 is needed. With only 30% GER in higher education, the rest of the students need employable skills. Vocational education aids this.

Hurdle of blue collarization of vocations in India must be overcome for this to succeed. Its provisions for reforming teacher education are timely as multiple reports on education point to lack of quality in teacher education. It has a multidisciplinary and research approach to education which is crucial for the 21st century.

Areas like Nano technology, bio technology, robotics, artificial intelligence all need this approach. Emphasis Technology can increase access to quality education. It recognizes the need for flexibility of education. This is important in the 21st century with high mobility and alternate ways of learning. Steps like Open schooling system, multiple entry and exit points in UG education, use of technological resources aid in this flexibility.

Regulatory reforms by emphasis on transparency, quality, self-assessment and voluntary declarations reduce the regulatory burden on education. A single regulatory body with 4 verticals will aid in this lean but effective regulation. No child left behind through focus on gender equality and disadvantaged groups, is the need of the hour. Gender Inclusion Fund and Special education zones aid in this. Focus on long neglected Indian languages and knowledge systems (tribals etc.) will advance cultural and scientific knowledge.

Transformational vision proposed in NEP 2020 requires huge resources in creation of infrastructure, personnel, and institutions. NEP2020 has set a target of 6% of GDP as a target at the earliest. This is a challenge in the current fiscal position of states and center due to COVID pandemic. But political will must be shown to realize the education transformation in NEP, 2020.

Overview of Education in India

Primary Education

➡ Primary or elementary education is typically the first stage of formal education. It is imparted immediately after preschool and followed by secondary education. Pre-

school or kindergarten includes Pre-Nursery, Nursery, Prep or Lower Kindergarten and Upper Kindergarten. In India, schools provide primary education from Class 1 to Class 8. The children in these classes are generally aged between 6 and 15 years. With the passage of the Right of Children to Free and Compulsory Education Act 2009, India has made significant progress in access to schooling and enrollment rates in primary education in recent years. Under the Act, education for children from 6 to 14 years of age or up to Class 8 has been made free by the government. Kerala has become the first Indian state to achieve 100 percent primary education.

Annual Status of Education Report (ASER):

➡ It is a nationwide survey of rural education and learning outcomes in terms of reading and arithmetic skills in the age group of 5-16 years. It has been conducted by the NGO Pratham since the last 15 years. In 2016, ASER switched to an alternate-year cycle where the "basic" ASER is conducted every other year (2016, 2018) and in alternate years ASER focuses on a different aspect of children's schooling and learning. In the backdrop of the pandemic, the survey was conducted via phone calls in 2020, reaching 52,227 rural households with school-age children in 26 States and 4 Union Territories. The key findings of the 15th Report (2020) are as follows:

1. **Access to textbooks:** According to the survey conducted in September, 2020, 20% of rural children have no textbooks at home. This proportion of students having textbooks is higher among students enrolled in government schools (84.1%) than in private schools (72.2%). In Andhra Pradesh, less than 35% of children had textbooks, and only 60% had textbooks in Rajasthan. More than 98% of students had textbooks in West Bengal, Nagaland and Assam.
2. **Enrolment:** The survey found that 5.3% of rural children aged 6-10 years had not yet enrolled in school in 2020, in comparison to just 1.8% in 2018. Non-enrolment visible mostly among the youngest children (age 6

and 7), may be due to delay in admissions owing to pandemic. Among 15-16 year-olds, however, enrolment levels are actually slightly higher than in 2018. Enrolment patterns also show a slight shift toward government schools, with private schools seeing a drop in enrolment in all age groups. 55 per cent children in the 6-14 age groups are enrolled in government schools, up from 66.42 per cent in 2018. Proportion of boys enrolled in government schools rose from 62.8% in 2018 to 66.4% in 2020. Proportion of girls enrolled in government schools rose from 70% to 73%.

3. **Smartphones related:** As many as 24.3 percent of the children said they had not received any learning material from the school in the week the survey was held because they had no smartphone. 6% of students in government schools were without access to a smartphone. A surge in the use of smartphones (as compared to 2018) has not been accompanied by greater access. Smartphone ownership has almost doubled from 2018 thus it is not only about technology, a third of children with smartphone access still did not receive any learning materials. Regardless of school type, WhatsApp was the most common medium through which activities and materials were received. However, this proportion was much higher among children in private schools (87.2%) than those in government schools (67.3%). Almost 40% of children in low education households got no materials and did no learning, compared to 17% of high education families.
4. **Learning activities:** In the week of the survey, one in three rural children had done no learning activity at all. About two in three had no learning materials or activity given by their school that week, and only one in ten had access to live online classes.
5. **Other observations:** Inherited disadvantages continue to affect the quality of learning, low education of families affecting their children's education. Students in rural areas have received very marginal assistance in the form of structured learning from teachers. They

mostly had to rely on parents and siblings to study at home. Students, specifically belonging to lower classes, could use the safety of the open countryside to learn a variety of topics by doing themselves, under guidance from teachers. Observational learning like that could create a strong foundation.

National Achievement Survey

- Aimed at understanding the health of the education system in government and government aided schools, National Achievement Survey is a representative sample of schools from all districts in India. National Achievement Surveys (NAS) was conducted for classes III, V and VIII, for the first time in November 2017, to assess the learning outcomes of students in government and aided schools in all subjects. But NAS does not assess the individual student performance. The survey test booklets had 45 questions for Classes III and V related to language, mathematics and 60 questions for Class VIII in Mathematics, Language, Sciences and Social Science. The competency based test questions reflected the learning outcomes developed by the NCERT which were recently incorporated in the RTE Act by the Government of India.
- In Mathematics, students were assessed on five basic operations i.e. addition (of 2- and 3- digit numbers), subtraction (of 3-digit numbers with and without borrowing), multiplication (of 2-digit numbers by a single digit), division and number placement. They were also given questions on geometry, patterns, measurement, money, and data handling. High scores were obtained in problems based on money, data handling, patterns, and addition while low scores were obtained in problems based on division and place value. Overall, high scores in mathematics questions were obtained by southern states (like Kerala, Tamil Nadu, Karnataka), UTs (like Daman & Diu, Dadra

& Nagar Haveli and Puducherry), and some North-East States (Tripura and Mizoram). Overall, low scores in mathematical questions were obtained by Chhattisgarh, Bihar, Madhya Pradesh, Jammu & Kashmir, Rajasthan, Haryana, and Odisha.

- In Languages, students were assessed on their abilities in listening (multiple choice questions based on a passage read aloud), word recognition (matching the picture to the correct word from two given options) and reading comprehension (reading a story/advertisement to locate information, interpret and infer). Overall, 65% of Class III students were able to listen to a passage with understanding, 86% were able to recognize words and 59% were able to read a passage and interpret meanings from it. For listening, the high scores (above 70%) were achieved by Tripura, West Bengal, Daman & Diu, Mizoram, and Gujarat.
- The low scores (**below 58%**) were in **Jammu & Kashmir, Chhattisgarh**, Bihar, Arunachal Pradesh, and Chandigarh. For word recognition, the highest performance was by Mizoram, Kerala, Tripura, Goa, and Meghalaya, while the lowest was by Bihar, Jammu & Kashmir, Chhattisgarh, Odisha, and Rajasthan. For reading comprehension, the highest scores were obtained by Puducherry, D&N Haveli, Daman & Diu, Tamil Nadu, and Mizoram, while the lowest was obtained by Chhattisgarh, Bihar, Uttarakhand, Haryana and Rajasthan. There are other issues as well.
- The RTE act has called for sufficient infrastructure, but less than 5% of schools have all the 9 facilities mentioned in the act. A study of 188 government-run primary schools found that 59 per cent of the schools had no drinking water, 89 percent had no toilets and over 60 % had no playgrounds. Around 25 percent of teachers remain absent every day. The quality of teachers is also important for the learning outcomes but the District Information system for education (DISE) data shows that only 69 % of all school teachers in the country have a graduate degree or more. One of the greatest challenges today in primary school education

is to make the students capable of handling modern situations while their syllabus is still designed for life a few decades back. As per UNESCO data, India has one of the lowest public expenditure rates on education per student, especially compared to other Asian countries like China.

Steps Taken By The Government

- Several steps have been taken by the government in order to improve primary education. So, that education as a tool can be used for the future generation, development of students as well as for India. **Sarva Shiksha Abhiyaan (SSA)** is Government of India's flagship program for achievement of Universalization of Elementary Education (UEE) in a time bound manner. The main objectives of SSA include that all children should either be in a school or an education guarantee centre of an alternate school, or an 'Back-to-School' camp by 2003. All children of the appropriate age would fulfil five years of primary schooling by 2007 and eight years of elementary schooling by 2010. Focus is on elementary education of satisfactory quality which will be considered to be beneficial for life. It also aims to bridge all gender and social class gaps at primary stage by 2007 and at elementary education level by 2010. SSA targets to have universal retention in schools both primary and elementary, by 2010.
- **However**, there are a large number of teacher vacancies under SSA, which adversely affects the Implementation of the scheme. There is also a shortfall in the infrastructure, for example, lack of pucca buildings, separate toilet facilities for boys & girls, etc., required for the implementation of SSA. Contrary to the recommendations of the 14th Finance Commission, the states have failed to earmark funds for priority areas in education out of the increased fund devolution to them.

The enrolment is now near universal, but the learning outcomes are still far from satisfactory, i.e., only about half the children in standard V could do a two-digit subtraction problem with borrowing.

- **Shagun Portal:** Its main aim is to capture and showcase innovations and progress in the Elementary Education sector of India by continuous monitoring of the flagship scheme - Sarva Shiksha Abhiyan (SSA). It provides a platform for all stakeholders to learn from each other, and instil a positive competitive spirit among all the States and UTs. This Portal also enables the Government of India and the State and UT Departments of education to conduct real-time assessments which normal paper-based monitoring mechanisms did not allow.
- **Padhe Bharat Badhe Bharat** can be regarded as a countrywide programme being implemented under the aegis of the Sarva Shiksha Abhiyan. It has normally been seen that kids who are unable to read during their early education tend to be bad in other subjects as well. The programme looks to improve the reading and writing skills of children in classes I and II, along with their mathematics skills.
- **Rashtriya Avishkar Abhiyan (RAA)**, is launched by Ministry of Human Resource Development. It is a framework converging School Education and Higher Education, which is aimed at encouraging children towards learning and developing their interest in Science and Mathematics. One of the important interventions under Rashtriya Avishkar Abhiyan is strengthening of school Science and Mathematics laboratories, through the **Rashtriya Madhyamik Shiksha Abhiyan (RMSA)**. Further, under RMSA, mathematics and science kits to schools shall be provided to schools, and Science Fairs/Exhibitions and Talent Search competitions shall be conducted at the district level. Interventions targeting school visits to higher institutions and learning enhancement measures for students have also been approved.

- **Vidyanjali** is a school volunteer programme and an initiative of the Ministry of Human Resource Development of India to boost community and private sector participation in government schools. Under the programme, volunteers, including NRIs, retired teachers, government officials, defense personnel, professionals will offer their services for co-scholastic activities for **children from class I to VIII**. It is the project launched under the aegis of the Sarva Shiksha Abhiyan by the Department of School Education and Literacy.
- **Mid-Day Meal (MDM)**– The National Programme of Nutritional Support to Primary Education (NP- NSPE) was launched as a Centrally Sponsored Scheme on 15th August 1995 in order to enhance enrolment, retention, attendance of children and also simultaneously improve their nutritional levels. In 2001 MDMS became a cooked **Mid-Day Meal Scheme** under which every child in every Government and Government-aided primary school was to be served a prepared Mid-Day Meal with a minimum content of 300 calories of energy and 8-12 gram protein per day for a minimum of 200 days. The Scheme was further extended in 2002 to cover not only children studying in Government, Government aided and local body schools, but also children studying in **Education Guarantee Scheme (EGS) and Alternative & Innovative Education (AIE)** centers. In October 2007, the Scheme was extended to cover children of upper primary classes (**i.e. class VI to VIII**) studying in 3,479 Educationally Backwards Blocks. The nutritional norm for the upper primary stage was fixed at 700 Calories and 20 grams of protein. The Scheme was extended to all areas across the country. The scheme has been discussed in detail in the section on hunger and Nutrition issues.

Teacher Training And Education

Educating teachers is essential in order to make our education system more vibrant, and helping teachers to equip them with modern knowledge in the era of globalization. There are many problems and issues plaguing the system of teacher

education. Teacher preparation has been a subject of discussion at all levels, from the government, ministries, schools, regulatory bodies, to teachers themselves. A very small time period is provided for teacher's training in India, about one year after the graduation - the effective session being of six to seven months only. Moreover, the main purpose of a teacher education programme is to develop a healthy attitude, value and broad-based interest which is not possible during the short duration. A better selection method would also improve the quality of training. Some suggestions include:

- (a) Test of General Knowledge should be applied.
- (b) Candidates should be interviewed.
- (c) Test in school subjects.
- (d) Test of intelligence should be administered
- (e) Test of language.
- (f) Aptitude; interest and attitude inventory should be administered.

➔ The current training programme does not provide proper opportunities to the student teachers to develop competency because the organizers of teacher's training programme are not aware of the present problems of schools. So there should be a close matching between the work schedule of the teacher in the programme and the school adopted for teacher preparation in a training college.

➔ The teacher training programmes do not emphasize the knowledge of the basic subject. The whole teaching practice remains indifferent with regard to the subject knowledge of the student teacher. The State Education Department have no data on the basis of which they may work out the desired intake for their institutions. There is a considerable lag between the demand and supply of teachers. This has created the problem of unemployment. Research in education has been considerably neglected. The research conducted is of low quality. Before undertaking any research, the teacher programmes are not studied properly. Mostly candidates do not have the requisite motivation and academic background for a well-deserved entry in the teaching profession. Teacher education has become isolated from schools and current

development in school education, which has been observed by the education commission. The schools consider the teacher education department as an alien institution and not a nursery for the professional development of school teachers. These departments do not care for the sounders of pedagogy involved in the procedure but only observe the formality of finishing the prescribed number of lessons.

➔ In India many steps have been taken to improve the quality of teacher education. Government should also increase its investment for establishing **teacher education institutions (TEIs)** and increase the institutional capacity of teacher preparation. Government may explore the possibility of instituting a transparent procedure of pre-entry testing of candidates to the pre-service teacher education programme, keeping in view the variation in local conditions. Duration of the Programme of Teacher Education needs to be enhanced. The first professional degree/diploma should be offered in face to face mode only. There is also a need to develop broad based norms for qualification of teacher educators. Opportunities need to be created for teaching practitioners to teach in teacher education institutions. An urgent need is to develop a comprehensive programme for continuing professional development of secondary school teachers. A Teacher Education assessment and Accreditation Centre (TEAAC) needs to be set-up. Every teacher education institute can have a dedicated school attached to it as a laboratory.

Step taken by the government for teacher training include Diksha – National Digital Infrastructure for Teachers to empower them. It provides offline/online training for teachers, student teachers and teacher educators. It will also provide a great platform to all teachers to improve their quality of study. On this portal, teachers can make content and share with each other. Prashikshak Education Portal was launched with a vision to strengthen District Institutes of Education and Training (DIETs) and bring quality teachers into the Indian school education system. It was established

through joint collaboration between the Ministry of Human Resource Development and the **Central Square Foundation**. Amendment of the RTE Act for Training of In-service Untrained Teachers specifies all school teachers to possess minimum educational qualifications which is laid down by National Council of Teacher Education. Those who aren't qualified have time until 31st March, 2019 to clear out all the prescribed rules to qualifications. This amendment to RTE Act, 2009 will enable in-service untrained elementary teachers to complete their training and ensure that all teachers at the elementary level in the country have a certain minimum standard of qualifications. This would ultimately result in improvement in overall quality of teachers, teaching processes and consequently learning outcomes of children.

- This will reinforce the Government's emphasis on improvement of quality of elementary education. For the improvement of schools, the government has started Shaala Siddhi or the **National Programme on School Standards and Evaluation (NPSSE)**. It is a comprehensive instrument for school evaluation leading to school improvement. It aims to enable schools to evaluate their performance in a more focused and strategic manner and facilitate them to make professional judgments for improvement. The programme's objective is to establish and refer to an agreed set of standards and to provide clear pathways for each school for self-evaluation, by focussing on key performance domains and their core standards for school evaluation.
- The structure of the Framework is simple yet flexible and lends itself to both self and external evaluation. Shaala Darpan is presently under implementation through **National Informatics Centre Services Inc. (NICSI)**. The objective of this project is to provide services based on School Management Systems to Students, Parents, and Communities.
- e-Pathshala has been developed by NCERT for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals and a variety of other print and

non-print material through the website and mobile app. All the concerned stakeholders such as students, teachers, educators, and parents can access e-books through multiple technology platforms i.e. mobile phones, tablets and on the web through laptops and desktops. All the NCERT books have been digitized and uploaded. In September, 2021, the Prime Minister launched a series of new initiatives under the National Education Policy. Indian Sign Language dictionary was launched by the Indian Sign Language Research and Training centre of DPwD (Department of Empowerment of Persons with Disabilities). It has 10,000 words in it. It was also accompanied by the launch of the Talking Books (audiobooks for the visually impaired). School Quality Assessment and Accreditation Framework (SQAACF) of CBSE was launched to help in bridging the inequality in education. It would also address the deficiency of the absence of a common scientific framework for various dimensions. These dimensions include curricula, pedagogy, assessment, inclusive practices and governance process. NISTHA teachers' training programme for NIPUN Bharat is aimed at training the teachers on new systems and techniques. The Vidyanjali Portal will be used for facilitating education volunteers, donors and CSR (Corporate Social Responsibility) contributors for school development. It is the platform for the country to achieve 'SabkaSaath, Sabka Vikas, Sabka Vishwas' with 'SabkaPrayas'. To sum up, steps need to be taken to make Primary Education more inclusive. We need to focus more on our Indian Education system and it needs serious reforms and changes.

- The funding should focus on progress towards goals, such as improving learning outcomes of children in elementary schools. We need to improve public expenditure rates on education per student. We need to improve the quality of the teacher by providing proper teacher training. The policy should shift its approach from input-based expenditure to

outcome-focused achievement. The pilot project of establishing Smart Classes in government schools must be initiated to make the teaching-learning process more effective through computer enabled techniques. The states must proportionately adjust the increased devolution of funds for education.

Secondary and Senior Secondary Education

➤ **Secondary education in India** begins after eight years of elementary education and is divided into two years of secondary education (classes IX and X) and two years of senior secondary education (classes XI and XII). National Achievement Survey (NAS) for Class X was conducted by the National Council of Educational Research and Training (NCERT) for the year 2018. This survey is conducted in order to inspect the result of learning in the country. As per the survey, students of class 10 have performed the worst in mathematics. In the average performance, Andhra Pradesh performs the best at 40.94 percent while Sikkim gives the lowest outcome with 27 percent. The performance of Delhi was remarkable in average score in five subjects while J&K gave poor performance in four of the five subjects.

➤ **Rashtriya Madhyamik Shiksha Abhiyan** was launched in March 2009 with the objective to enhance access to secondary education and to improve its quality. It is envisaged to achieve an enrolment rate of 75% from 52.26% in 2005-06 at the secondary stage of implementation of the scheme by providing a secondary school within a reasonable distance of any habitation. The other objectives include improving quality of education imparted at secondary level through making all secondary schools conform to prescribed norms, removing gender, socio-economic and disability barriers, providing universal access to secondary level education by 2017 and achieving universal retention by 2020. Important physical facilities provided under the scheme include additional classrooms, laboratories, libraries, art and crafts room, toilet blocks, drinking water provisions and residential hostels for

teachers in remote areas. Important quality interventions provided under the scheme include appointment of additional teachers to reduce focus on Science, Math and English education, in-service training of teachers, science laboratories, ICT enabled education, curriculum reforms and teaching-learning reforms.

Higher Education

India's higher education system is the third largest in the world, next to the United States and China. The main governing body at the tertiary level is the University Grants Commission, which enforces its standards, advises the government, and helps coordinate between the Centre and the state. Accreditation for higher learning is overseen by 15 autonomous institutions established by the University Grants Commission (UGC). The status of higher education in India, as per All India Survey of Higher Education (AISHE) Report (2019-20) is as follows:

1. The percentage of students belonging to the eligible age group enrolled in Higher Education, in 2019-20 is 27.1% against 26.3% in 2018-19 and 24.3% in 2014-2015.
2. In Higher Education, **Gender Parity Index (GPI) in 2019-20 is 1.01** against 1.00 in 2018-19. This indicates an improvement in the relative access to higher education for females of the eligible age group compared to males.
3. In 2019-20 the pupil-teacher ratio is 26.
4. The number of students pursuing **PhD in 2019-20 is 2.03 lakh against 1.17 lakh in 2014-15.**
5. Nearly 3.38 crore students enrolled in programmes at under-graduate and postgraduate level. **Nearly 85% of the students** (2.85 crores) were enrolled in the six major disciplines. Such as Humanities, Science, Commerce, Engineering & Technology, Medical Science and IT & Computer.

Issues associated with higher education in India:

According to UGC, the total number of sanctioned teaching posts in various Central Universities are 16,699 for professors, 4,731 for associate professors, and 9,585 for assistant professors. Out

of the total sanctioned teaching posts, 5,925 (35%) professor posts, 2,183 (46%) associate professor posts and 2,459 (26%) assistant professor posts are vacant. Withdrawal of the public sector has left the space open for private institutions that have turned education into a flourishing business. Most of the teachers in private colleges are underpaid and overworked. There has been a rampant expansion in the number of colleges with scant regard for standards and quality. This phenomenon also shows the lapses in the regulatory structure. National **Assessment and Accreditation Council (NAAC)** in its assessment report pointed out that 68% of institutions in India are of middle or poor quality. Ad-hoc appointments and low pay scale, inadequate teacher training are all factors that have caused a deterioration in the quality of education.

The All India Survey of Higher Education (AISHE) Report 2016-17 shows that in India, the gross enrolment **ratio in higher education is 25.8**. The report further exposes the scarce research opportunities in the country as students enrolled in **PhD is merely 0.5%** of the total student enrollment. Also, at present, there is no mechanism for ensuring the accountability and performance of professors in universities and colleges. This is unlike foreign universities where the performance of college faculty is evaluated by their peers and students.

The Department of Science and Technology mentions that Indian **R&D expenditure** has remained constant at around **0.6%-0.7% of its GDP**. This is very low compared to countries like **China (2%), Israel (4.3%)**. India has severely under-invested in education over the last 40 years, and today even the top institutions have very poor laboratory facilities. In India, there are separate research institutes and universities. This leads to most Indian universities and colleges conducting very little research. Further, most of the time, the faculty is under pressure to publish a certain number of papers to gain promotion. This often makes them publish in predatory journals as a way out. The practical field work for technical education, more often than not, is undertaken at laboratories, industrial institutions and workshops outside the centers of training.

In the present state of acute financial position, it is not possible to provide large workshops in the educational institutions. Also, today we find many technicians facing unemployment. Lack of relevant career opportunities diminishes the appeal of academic education among students. For example, if studying hard and critical thinking doesn't lead to career improvement, students tend to lose academic ambition. This generally happens when technical schools prescribe a curriculum without keeping view of the requirements of the industries. As a matter of fact, technical education should be organized, keeping in view the needs of the industries. In India, only a few jobs exist after higher education. The Majority of jobs require lower skills and pay poorly. In such a system the Lower-ranked colleges don't find any motivation to improve themselves. Moreover, the progress in the utility and quality of the research work does not compare favourably with foreign research works. We need to redefine our technical curriculum as it lags behind the demand and supply in the field of technical institutions.

Even in terms of pupil teacher ratio, it is quite low as compared to the other foreign countries. Recently, Quacquarelli Symonds (QS) released their World University Rankings for 2022. In that, no Indian institution figures in the top 100 list in that index. Further, only three educational institutes from India feature in the top 200 list. This raises the important question regarding the quality of higher education in India. Also, as per AISHE 2019-20 report, the situation of higher education in India has improved as compared to the past. But it is still far behind in comparison to countries like China, Israel, etc. Hence, urgent steps are needed to improve the quality of higher education in India, else the demographic dividend might turn into a demographic disaster.

Bodies associated with Higher Education:

Government has formed different regulatory bodies in order to make our education system more inclusive.

Some of the bodies established by the government are discussed below:

1. **All India Council of Technical Education (AICTE):** It is the statutory body and a national-level council for technical education, under Department of Higher Education,

Ministry of Human Resource Development.

2. Indian Council of Historical Research (ICHR):

The Indian Council of Historical Research (ICHR) is an autonomous body of the Ministry of Human Resource Development, which had been established by an Administrative Order of the then Ministry of Education. The body, over many years, has provided financial assistance to the historians and direction to the research scholars in their multifarious topics of historical research through established historians and scholars of the country.

3. Indian Council of Social Science Research (ICSSR):

The Indian Council of Social Science Research is an important organization of the Central Government. This council was established in August 1969 by the Central Government. It is an autonomous organization. This council helps to provide opportunities for conducting research in the field of higher education.

4. University Grants Commission (UGC):

The University Grants Commission (UGC) of India is a statutory organization set up by the Union government in 1956, charged with coordination, determination, and maintenance of standards of university education. It provides recognition to universities in India and disburses funds to such recognized universities and colleges. Its headquarters are in New Delhi, and six regional centers in Pune, Bhopal, Kolkata, Hyderabad, Guwahati and Bangalore.

UGC:

UGC provides funds to the various higher educational institutes and carries out the function of coordination, determination and maintenance of standards in institutions of higher education. However, UGC has been found to have an inadequate regulatory structure for higher education that has resulted in a visible deterioration in standards. While providing grants, widespread irregularities in approval of institutions and courses has been found. The fund-granting process of the UGC has also been plagued with allegations of corruption and inefficiency. UGC is not capable of monitoring the standards of education in higher education

institutions. UGC does not have the adequate number of personnel, of requisite quality, to be an effective regulatory force in the higher education sector.

As per **Hari Gautam committee report** on UGC, UGC has deviated from its core goal of being a watchdog for ensuring excellence in education. The panel has also raised questions about selection criterion for UGC members saying that at times even businessmen have made the cut. It has mentioned working structure of UGC as extremely ad-hoc where there is no coordination between different wings which leads to wastage of man and money power.

Higher Education Commission of India (HECI):

The Higher Education Commission of India (Repeal of University Grants Commission Act) Bill 2018 seeks to repeal UGC Act and provides for setting up of Higher Education Commission of India. The HECI is supposed to replace the University Grants Commission which has been responsible for the maintenance of the standard of higher education in India. HECI shall function as a body that lays down uniform standards for the development of education in India. Higher Education Regulatory Council (NHERC) is expected to function as the common, single point regulator for the higher education sector to relook and repeal existing Acts and restructure various existing regulatory bodies. The aim of HECI is to decrease the number of regulators and to decrease the interference of the government in the management of the educational institutions. HECI claims that the regulation of higher education institutions will be more transparent. It encourages public disclosures by specifying the various parameters of the academic outcomes and the academic performance by all the higher educational institutions.

Steps taken by government to improve higher education:

Different steps have been taken by the government to improve our higher education system. For Technical Education, IMPacting Research INnovation and Technology (IMPRINT) is a Pan-IIT and IISc joint initiative to develop a roadmap for research to solve major engineering and technology challenges in ten technology domains relevant to India. These 10 domains are Health Care, Com-

puter Science and ICT, Advance Materials, Water Resources and River systems, Sustainable Urban Design, Defence, Nano-technology Hardware, Environmental Science and Climate Change and Energy Security. Another scheme is Uchchatar-Avishkar Yojana, which is under Ministry of Human Resource Development. It aims to promote industry-specific need-based research in the educational institutions to keep up the competitiveness of the Indian industry in the global market. All the IITs have been encouraged to work with the industry to identify areas where innovation is required. The main aim of launching the UAY scheme is to make students more accustomed with the outer world and give them a market oriented mindset.

➤ **Global Initiative of Academic Network (GIAN)** programme was formally launched by the Union Minister for Human Resource Development to tap the talent pool of scientists and entrepreneurs, internationally and encourage their engagement with the institutes of Higher Education in India. This would augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence. It enables interaction of students and faculty with the best academic and industry experts from all over the world and also share their experiences and expertise to motivate people to work on Indian problems. It is a system of Guest Lectures by internationally and nationally renowned experts targeted towards a comprehensive Faculty Development Programme not only for new IITs, IIMs, IISERs but also other institutions in the country.

➤ **Launched in December, 2002**, Technical Education Quality Improvement Programme (TEQIP) aims to upscale and support ongoing efforts in improving quality of technical education and enhancing existing capacities of the institutions to become dynamic, demand-driven, quality conscious, efficient and forward looking, responsive to rapid economic and technological developments occurring both at national and international levels. Higher Education Financing Agency (HEFA) is a joint venture of MHRD Government of India and Canara Bank for financing/ creation of capital

assets in premier educational institutions in India.

➤ HAIFA's scope is greatly expanded to cover school education, educational institutes under the Ministry of health etc. Its main work is towards developing India's top-ranked institutions like IIT's, IIIT's, NIT's, IISCs, AIIMS into Globally top ranking institutions through improvement in their academic and infrastructure quality. For improving the University and Higher Education, the National Education Policy 2020 contains certain key initiatives. They are setting up HECI (Higher Education Commission of India) as an umbrella regulator except for legal and medical education. It will have four verticals, namely – National Higher Education Regulatory Council (NHERC) for regulation; General Education Council (GEC) for standard-setting; Higher Education Grants Council (HEGC) for funding; and National Accreditation Council (NAC) for accreditation.

➤ It has made higher education broad-based, multi-disciplinary and holistic with the provision of the flexible curriculum; integration of vocational education; multiple entries and exit points with e respective degrees and setting the Under Graduate education period between 3-4 years. It also aims to raise the Gross Enrolment Ratio (GER) to 50% by 2035.

➤ **Rashtriya Uchchatar Shiksha Abhiyan (RUSA)**- National Higher Education Mission is a Centrally Sponsored Scheme (CSS), launched in 2013, which aims at providing strategic funding to eligible state higher educational institutions. The Bhuvan-RUSA Portal, developed by the National Remote Sensing Centre (NRSC) of Indian Space Research Organization (ISRO) is a user-friendly mobile application which enables to collect and report geo-tagged information on various parameters such as new construction, up-gradation work and equipment in state higher educational institutions. This mobile app will provide a platform for controlled crowdsourcing to build spatial databases on **Bhuvan Geo-platform**.

- The National Institutional Ranking Framework (NIRF) has been launched by Ministry of Human Resource Development (MHRD), Government of India. This framework outlines a methodology to rank institutions across the country. The methodology draws from the overall recommendations broad understanding arrived at by a Core Committee set up by MHRD, to identify the broad parameters for ranking various universities and institutions. The parameters it broadly covers include– Teaching, Learning and Resources; Research and Professional Practices; Graduation Outcomes; Outreach and Inclusivity; and Perception.

Online Education

- e-Education or online education is the application of information and communication technology (ICT) for delivering education at different levels in India. Through e-governance in education, education services are made available to citizens in a convenient, efficient, and transparent manner. This will be very much helpful in achieving the desired target of literacy in India.
- From 'blackboard' to 'digital board', Government schools in rural India are witnessing a technological revolution. e-learning has also grown along with the development of technology. e-learning along with ICT has a greater impact on the growth of the economic educational system of the countries. The number of courses and programs offered online have increased in recent times in most of the higher education institutions. The emergence of e-learning has lent its supporting hand to the government to overcome the shortage of teachers. It is making learning easier, comfortable and accessible, thereby helping in increasing the literacy rate in India.

Steps taken by government:

- Different Steps have been taken by the government in order to promote Information and communication technology (ICT) for delivering education. SWAYAM PRABHA is a group of 32 DTH channels devoted

to telecasting of high-quality educational programmes on 24X7 basis using the GSAT-15 satellite. Every day, there will be new content for at least (4) hours which will be repeated 5 more times in a day, allowing the students to choose the time of their convenience. It would involve curriculum based course contents covering diverse disciplines such as arts, science, commerce, performing arts, social sciences and humanities subjects, engineering, technology, law, medicine, agriculture etc. It also covers all levels of education: School education, undergraduate, postgraduate, engineering, out of school children, vocational courses and teacher training.

- **SWAYAM- Massive Open Online Course(MOOCs):** SWAYAM-MOOCs project is intended to address the needs of school level 9-12 to Undergraduate and Postgraduate students, covering all disciplines. The MOOC platform has been launched by the government with the objective of taking “the best teaching learning resources to all, including the most disadvantaged,”. “SWAYAM will enable students to virtually attend the courses taught by the best faculty; access high quality reading resources, participate in discussion forums; take tests and earn academic grades.” The National Digital Library of India (NDLI) is another project of the Ministry of Human Resource Development under the aegis of National Mission on Education through Information and Communication Technology (NMEICT). The objective of NDL is to make digital educational resources available to all citizens of the country to empower, inspire and encourage learning. National Digital Library of India is developed by IIT Kharagpur. The digital library anytime and anywhere absolutely free of cost and will contribute greatly to the Government’s commitment towards “Padhe Bharat Badhe Bharat”.

- **Digital International Standard Book Number (ISBN)** portal seeks to facilitate publishers and authors to register for ISBN online. It aims to automate completely the process of seeking application, their examination and

allotment of ISBNs. VittiyaSaksharta Abhiyan aims to create awareness among people about the digital economy and cashless modes of transactions. Under it, young students and faculty members will be roped to encourage and motivate people to use a digitally enabled cashless economic system for transfer of funds. The National Academic Depository (NAD) is an interoperable digital store house of academic awards (degrees, diplomas, certificates, mark-sheets, etc.) available on 24 X 7 online mode. It provides a system for lodging, retrieval, authentication and verification of academic awards in digital format for students, academic institutions, boards, eligibility assessment bodies and other user/verifying entities like banks, employer companies, government agencies and academic institutions. In September 2021, N-DEAR (National digital architecture) was launched to act as a 'super connect between various academic activities, in the same way as UPI interface revolutionized the banking sector. It will play a major role in eradicating inequality in education and its modernization.

- ➔ However, there are major challenges in improving e-education in India. There is a lack of awareness of the eLearning platforms among many students and parents. For those who have access, there are bandwidth issues and connectivity issues. There is also a lack of computer literacy among the mainstream population. This is true for the rural masses as well and this also hinders introduction of eLearning and its implementation. Another concern is the lack of e-content of high quality and difficulty in engaging learners actively for online learning.

Pandemic and digital education:

- ➔ Coronavirus-induced school closures in the country, removed a safety-net for many young students. Virtual classrooms highlighted social inequalities, be it access via mobile/tablet/laptop or lack of internet to even join the call. When governments across the world enforced "stay-at-home" orders, we saw the shutdown of schools, educational institutions and universities. Lakhs of students went from learning in a physical space at their schools/

colleges to a virtual realm; and within a matter of days, educators had transformed lesson plans into content fit for learning via WhatsApp/Zoom. With public schools being completely shut for more than a year, a majority of the kids coming from low-income families, had no access to any form of education for more than 12 months. Expected issues like lack of smart devices and access to the internet, forced these kids to miss an entire year of schooling. Further, most of them might have probably forgotten what they already knew. Their families, especially in rural India, also might have gotten used to having extra hands at home and will possibly be reluctant to send their kids back to school again.

- ➔ Given the social impact of education in our country, reopening schools has stayed high on priority, even for the governments. Many schools and colleges have come up with creative ideas regarding how to restart learning in their premises. For instance, some rural areas have begun using outdoor locations, or teaching in smaller groups in local community centres. The government can also think of increasing the duration of the academic year, to give the system more time to make up for the lost year and half, and facilitate widespread teacher vaccination drives. Some states have kept mandatory vaccination for teachers as a criterion to give permissions for schools and colleges to reopen. According to the Unified District Information System for Education (UDISE) survey 2019-20, only one in four teachers in India was trained to use a computer for teaching. And bridging this digital divide to enable online learning would take time. But accessing and creating free standardized content that can be easily disseminated through existing widespread mediums like television, radio and telephone can be done immediately. Many states have already undertaken this practice and such examples are mentioned in the section below. Moreover, governments and State education departments would also need to create new standardized assessments to ensure that continued learning takes place via these platforms.

Examples of digital education initiatives:

1. 'Wise'- It is a mobile phone app integrated with Zoom video streaming service which has been developed by two engineering graduates from IIT Bombay. It helps in imparting online teaching even on low Internet bandwidth i.e. 2G connectivity. For students coming from low income backgrounds and low connectivity areas, this app has come as a great boon. It is already being used by more than 3,000 teachers and 2,50,000 students, especially for the students and teachers in Kashmir.
2. 'Diganta Swaraj Foundation' has come up with an initiative called 'BolkiShaala' or 'Speaking School', to enable students in remote villages of the tribal belt of Maharashtra to continue their learning, with the help of loudspeakers. The teachers record the study material in advance, which is then played out through loudspeakers for students. Students gather in small groups in open spaces to listen to them. A volunteer is available at hand to answer questions and clarify doubts, if any.
3. 'Bleetech Innovations' has created a remote learning kit for deaf children. The kit contains workbooks with visual contents and requisite stationery to enable deaf students to remain in touch with their studies, even as their schools are closed.
4. 'Support Our Students', an initiative started in Bengaluru aimed at collecting old and unused desktop computers, laptops and tablets from willing donors. The volunteers would get the devices refurbished, and then donate them to underprivileged children who were in urgent need of such devices for their education. Nonprofits like 'StreeShikshan Sanstha' and 'Lodge Trimurty', also joined hands to donate used tablets for reading to girl students from the slums of Nagpur.
5. Teachers from government schools in Karnataka also helped in bringing schools to the doorsteps of students residing in hinterlands. The teachers travelled daily (5-20km) to remote villages in their talukas to teach students in village public areas like temples, community centres, under the shade of trees, etc. The teachers also conducted story sessions and singing competitions, and played games in between class hours, to keep them engaged. Similar concept was adopted in Tripura in the form of 'neighbourhood classes' and in Chhattisgarh in the form of 'mohalla classes'.
6. In Nagaland, 'Pen-drive schools' became common, wherein pen-drives holding study materials was distributed among students. A similar initiative was adopted in Dadra & Nagar Haveli, wherein workbooks for students, containing study materials and solved examples, were delivered to students' homes by the administration.
7. The government of Sikkim began the 'Home-schooling for elementary education' scheme, under which government school teachers would visit students in remote villages, at their homes or in public places like community centres, to teach them. Even in Dumarthar- a remote tribal village in Jharkhand, teachers adopted a unique way of imparting education. The mud-baked walls of some houses were painted and converted into blackboards, to facilitate open-air teaching.
8. In Odisha, the 'Radio Pathsala' program imparted lessons to students via radio, parallel to the online version. Online education world is full of information on everything. Educational videos, which have helped thousands, can advance learning even beyond the pandemic, using talented teacher-communicators. States such as Tamil Nadu and Kerala have already hosted curriculum-based video lessons on the internet, after beaming them on television. This would take out-of-the-box thinking during the pandemic to come up with interventions that are a substitute for traditional methods and prevent 2020 from becoming a zero year. It is important to note that 80% of families provided learning support to children. Schools opting for a hybrid solution of partial reopening and online learning should ensure expanding the availability of textbooks for all students including those who dropped

out or are waiting to be formally admitted. Government must try to bridge the digital divide by providing the needy families with the necessary support in terms of equipment and access to the internet. Incorporating a blended learning method would bring the benefits of both traditional and e- Learning modes and help in advancing e-learning initiatives in India. There needs to be a thorough upgradation of technological infrastructure and reduction of access fees and bringing them to an affordable scale. Incorporating mobile learning will help overcome the issues of connectivity and accessibility to a great extent. One must also ensure that quality e-content is developed and monitored to ensure that standards are maintained.

Policymakers also need to promote employment-led-growth oriented policies to create enough jobs for 650 million Indian youths under age 25. The funding for the R&D sector should be increased to improve infrastructure and the funding for research. It would also prevent the

brain-drain of talents from the country. With the advent of a pandemic, now digital education is not an alternative option but an imperative option. So the government and other stakeholders have to improve the ICT for the post pandemic education system in India.

India also needs to collaborate with foreign institutes and industries to foster a culture of research, upgrade pedagogy and facilitate industry student connection, etc. The government has to take steps to improve the pay scale offered to teachers and by putting an end to the system of ad-hoc and temporary appointments.

Instead, the government can force the higher educational institutes in India to go for the faculty recruitment process well before a post is vacated. Further, the government can appoint a separate body for a performance audit of teachers. The government has to broaden the scope of Massive Open Online Course (MOOCs) and Open and Distance Learning (ODL) to provide access to quality education beyond geographical boundaries.

