5 Education

In this chapter, we shall review the main stages and schemes in the development of the educational system in India. We shall take into consideration primary, secondary as well as higher education and besides, research institutes in some representative areas. This will give us an idea of the educational system throughout the country.

The first Census of independent India in 1951 revealed the extreme complexity and intractability of the educational issues in the country. In the first Census, the literacy level was 17%. It rose as shown below.

Census Year	Literacy
1971	34%
1981	43%
1991	52%
2001	64%

Improving this percentage was a serious challenge for the government of India. Several remedial schemes were put in place to deal with it.

Primary education : Primary education refers to the schooling given to children in the 6 to 14 year age-group. In 1988, the central government started a scheme for the spread of primary education and to improve educational standards. It is known as Operation Blackboard. The government made funds available to help improve the standard of the schools and to fulfil minimum educational needs such as at least two proper classrooms, toilets, one of the two teachers to be female, a blackboard, maps, laboratory apparatus, a small library, a playground, sports equipment, etc. This scheme helped the primary education system to gain some momentum.

Do you know?

After the formation of Maharashtra State in 1960, the government took the decision to implement a common state-wide curriculum for Stds I to VII. Principal Sayyad Rauf of S.T. College, Mumbai was assigned the task of preparing the draft of this curriculum.

In 1994, this scheme was expanded and provision was made for one additional classroom and for appointing one more teacher in schools with an enrolment of more than 100 students, with priority given to girls' schools, schools with a majority of scheduled caste and tribe students and schools in rural areas. It was also made binding upon the State government to appoint female teachers to fifty percent of the posts in schools. Again in 1994, the District Primary Education Programme (DPEP) was started with the objective of universalisation of primary education. It was implemented in seven States including Maharashtra. The plan envisaged 100% attendance in primary schools, arresting student drop-out, education for girls and for the physically handicapped. It included programmes such as research on and evaluation of primary education, alternative education, creating societal awareness, etc. The 'mid-day meal' scheme was started in 1995 to provide proper nourishment for students.

Can we achieve this?

In 1991, Kerala became a fully literate State. What steps must be taken to achieve 100% literacy in Maharashtra as well?

Do you know?

Tarabai Modak began work in the field of education in Bordi and Kosbad. She started *Anganwadis* for Adivasi children. She worked hard to bring in the 'learning by doing' method, to start *kuranshalas* (meadow schools) and to spread vocational technical education.

Anutai Wagh established an institution at Kosbad for the progress of Adivasis in Thane district. It is known as the Kosbad Project. She started crèches, nurseries, primary schools, adult education classes, *balsevika* training schools, etc. for the education of Adivasis.

Secondary education : After independence, Education Minister Maulana Abul Kalam Azad decided to bring about fundamental changes in the field of education. The University Education Commission was set up for this purpose. This Commission recommended the appointment of a separate Commission for secondary education. Accordingly, in 1952-53, the Mudaliar Commission was appointed. At that time, the pattern of education consisted of 11 + 4 years for the first degree or of 11+1+3 years.

Maulana Azad

The work of the Commission : The Commission studied secondary education, the nature of the curriculum, medium of instruction, teaching methodology and made certain recommendations. This Commission proposed the concept of Higher Secondary Education. However, it was found difficult to implement it all over the country.

Do you know?

The Maharashtra State Board of Secondary and Higher Secondary Education was established on the 1st of January 1966 at Pune. This Board conducts the school leaving examinations of Std X and Std XII. The Board also publishes a periodical called '*Shikshan Sankraman*'.

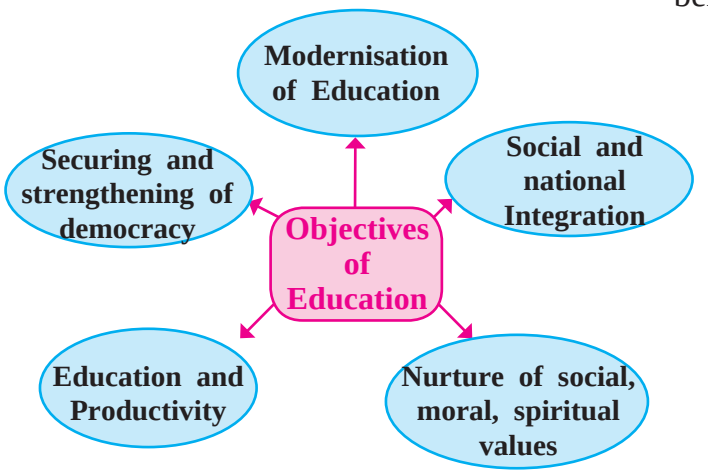
The Kothari Commission : In 1964 a Commission was appointed under the Chairmanship of Dr D. S. Kothari. Dr J. P. Naik made valuable contributions to the work of this Commission. The Commission also recommended the 10+2+3 pattern for secondary, higher secondary and university education. This system was implemented from 1972. The Commission also suggested a uniform national system of education, the inclusion of the mother tongue, Hindi and English in education, as well as continuing education, adult education, education by correspondence and open universities to make education trickle down to the lowest rungs of society. It also recommended increased provision in the government's budget for expenditure on education of neglected sections like the scheduled castes and tribes.

Dr D. S. Kothari

J. P. Naik

Maharashtra government adopted the 10+2+3 pattern in 1972 and conducted the first Std X Board exam in 1975.

Objectives of education according to the Kothari Commission



Higher education

Education in the post-independence era : After independence, in 1948, the Central Government appointed the University Education Commission whose Chairman was Dr Sarvapalli Radhakrishnan. Its functions included financial grants, the standard of the universities and their co-ordination.

Dr Sarvapalli Radhakrishnan

Method of functioning : The Commission accepted the Five-Year Plans method. It began to sanction and disburse grants to the universities on behalf of the government. The Commission undertakes planning of university education, co-ordination of syllabii, giving primacy to national needs through education and the planning and implementation of various schemes of higher education. It has done valuable work in establishing university development councils, centres for advanced studies for post-graduate education, establishing new universities. After the advent of television in India, it initiated the 'Countrywide Classroom' programme which is telecast by Doordarshan on behalf of the Commission.

Do you know?

The Art Department was established in 1965 in Maharashtra, to frame the policy for Art Education and for its implementation by institutes of art. This Department undertook the responsibility of organising the drawing grade examinations at school level.

National Council of Educational Research and Training (NCERT) : This body was established in Delhi on the 1st of September 1961. Its main objective is to help the Central Government in matters of school education in the context of a comprehensive policy and in implementing educational schemes. The NCERT was given the responsibility of educational research and development, training, extension, educational programmes, restructuring of school curriculum and textbooks. It has played a central role in designing school curricula and textbooks with the cooperation of the Central Board of Secondary Education (CBSE). It provides guidance and cooperation in the area of primary and secondary education to the state governments. It has been involved in designing workbooks and handbooks for teachers, in teacher training, in developing teaching-learning techniques and conducting talent search examinations at the national level.

SCERTs were established in all States on the lines of the NCERT.

The Maharashtra State Council of Educational Research and Training was established in Pune in 1984. This institute performs various functions such as improving the standard of primary education, in-service training of teachers, training in the areas of syllabii and evaluation, vocational guidance for students after Std X and Std XII exams and other educational functions. This institute is known as the academic authority. It brings out a periodical called *Jeevan Shikshan.*

Do you know?

The Maharashtra State Bureau of Textbook Production and Curriculum Research (Balbharati) was established in Pune on 27 January 1967. Balbharati prepares textbooks for school children of 1st to 12th standards. Textbooks are made in eight languages, namely, Marathi, Hindi, English, Urdu, Kannad, Sindhi, Gujarati and Telugu. 'Kishor', a monthly magazine for children, is also published by Balbharati.

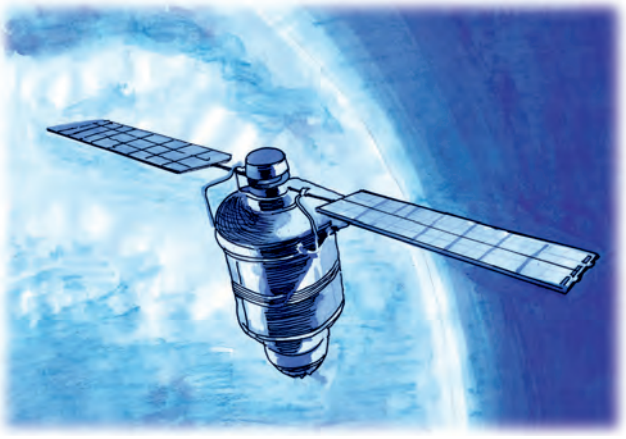
National Policy on Education 1986 : According to this policy, certain changes of a fundamental nature were brought about in primary, secondary and higher secondary education in keeping with the changing needs of society. Under this policy, a common core curriculum was framed for all States. The expectation is that, by this means, all students in India will get equal educational opportunity. There is scope in the national curriculum for individual States to bring in flexibility in accordance with their cultural, geographical and historical needs.

The 'Primary Education Curriculum 1988' was prepared on the basis of the plan of action designed at the national level for the effective implementation of the National Policy on Education 1986.

Do you know?

The Competency based Primary Education Curriculum 1995 : Even as the Primary Education Curriculum 1988 was being implemented, a Committee was formed at the national level with Dr R. H. Dave as its Chairman, to determine minimum levels of learning. The Dave Committee developed charts of minimum levels of learning in language, mathematics and environmental studies up to Std V. The charts showed the sequence of learning of the competencies meant for each class.

Use of a satellite : In 1975, India met with success in its attempt to use a satellite for the purpose of education. Eknath Chitnis, a scientist with ISRO, played an important role in it.



'Edusat' Satellite

SITE (Satellite Instructional Television Experiment) was undertaken for educational purposes under the leadership of the Space Applications Centre at Ahmedabad. The concept of satellite

education came out of this experiment. America had helped India in this programme. The programme helped to make provisions for a good standard of education in rural areas.

Indira Gandhi National Open University (IGNOU) : This Open University was established with the objective that the stream of education should make its way into every average household of the country. The United Nations had declared 1970 as the International Education Year. In the same year, a seminar was organised in New Delhi on the subject of Open University by the Government of India Departments of Education and Social Welfare, Information and Broadcasting, University Grants Commission along with UNESCO. The idea of establishing an open university evolved in this seminar.

In 1974, the government appointed a committee under the chairmanship of P. Parthasarathy and the Open University took shape on 20 September 1985 in accordance with its recommendations and suggestions. It was named after Prime Minister Indira Gandhi.

Find out :

The Yashwantrao Chavan Maharashtra Mukta Vidyapeeth was established in Nashik in 1989. Find out about this open university with the help of the Internet.

Those who are unable to get a college education in the formal way are given concessions in eligibility criteria, age and other conditions for admission to this university. In 1990, the IGNOU started an audio-visual distance education programme through Akashvani and Doordarshan. It conducted more than one thousand curricula of various branches. It provides facilities for education through 58 training centres in the country and 41 centres in foreign countries.

Research institutes – science

In the post-independence period in 1950, the Council of Scientific and Industrial Research (CSIR) was established with the objective to promote scientific research in the country and to take the benefits of the research to all the people. Research began in fields like physics, chemistry, pharmaceuticals, food processing and mining. In order that industry benefits from this research, contracts were signed with industrial institutes. That helped to reduce our imports and save foreign currency. This institute also motivated fundamental research. The Laboratories of the Council also played an important part in bringing back to the country students who had gone abroad for higher education.

The achievements of the CSIR include making the ink used for marking voters' fingers during elections, medicines for malaria, elephantiasis and tuberculosis, water purification technology, reduction in the time required for bamboo production. It also used DNA fingerprinting for the first time in India, conducted a genetic study of the Adivasis of the Andamans and proved that those tribes are 60,000 years old and developed the earthquake early warning system.

It has also played an important role in the use of neem as a pesticide, use of turmeric for healing wounds and in the case of the patents for varieties of rice. The CSIR has prepared a digital encyclopaedia of Indian traditional knowledge and made it available in eight international languages.

Mathematics : The 'National Institute for Research in the Mathematical and Physical Sciences' in Tamil Nadu was established in 1962. It encouraged the highest level of research in mathematics.

Computers : In 1969, we made the first indigenous computer named the ISIJU computer as this was achieved by the Indian Statistical Institute and Jadavpur University working together. In 1974, Tata Consultancy Services, (TCS), obtained an American contract in the area of software production and that was the beginning of the software industry in India. Computers also helped to step up the speed of scientific research.

In 1987, America refused to allow India to get a supercomputer. The Rajiv Gandhi government decided to develop a supercomputer indigenously. In 1988, the Central Government established the Centre for Development for Advanced Computing (C-DAC) in Pune and in 1991 the Centre under the leadership of Dr Vijay Bhatkar developed the Param-8000 supercomputer.

Bhabha Atomic Research Centre (BARC) : This institute has conducted valuable research in the fields of nuclear physics, solid state physics, spectroscopy, chemical and life sciences. It also started a school to train scientists for setting up nuclear reactors.

Engineering

Indian Institute of Technology (IIT) : India's first IIT was set up at Kharagpur in West Bengal in 1951. The objective of this institute was that higher and advanced education in all branches of engineering should be available in India and meet the country's needs. The engineering colleges at Powai, Chennai, Kanpur and New Delhi were converted into IITs. The Soviet Russia, America, Germany and the UNESCO all extended help to set up these institutes.

The IITs in India were given the status of deemed Universities and BTech and MTech courses were started there. Admission through entrance exams, nominal fees and reservations for students are the special features of the IIT institutions. In the decade from 1970 to 1980 a large number of IIT students began to leave for foreign countries causing the Brain Drain crisis. However, this situation changed after 1990. IITs were also established at Guwahati (Assam) in 1994 and in Roorkee in 2001.

Indian Institute of Management : As high quality engineers were graduating from the IITs, the Centre and the Gujarat government started the Indian Institute of Management to mould skilled managers. Harvard Business School in America helped to set up IIM Ahmedabad. Other IIMs have been set up at Kolkata, Bengaluru, Lucknow, Kozhikode, Indore and Shillong.

Do you know?

Systematic training in any aspect of film making is given at the Film and Television Institute of India. Facilities were made available for imparting scientific training at this Institute in all aspects of film-making such as direction, editing and acting. This Institute inherited the legacy of the Prabhat Film Company of Pune.

National Institute of Design : This institute was established in Ahmedabad in 1961 for the purpose of imparting training in industrial design. Courses in basic

design, graphic design, product design and visual communication were started in 1963-64. The work done by this institute includes designing of the transistor radio and the calculator and the logos of Indian Airlines and the State Bank of India.

Research institutes – medicine

In the post-independence period in 1949, the Indian Council for Medical Research (ICMR) was established for conducting research in the medical field. It was given the responsibility of cooperating with universities, medical colleges, government and non-government research institutes and giving them guidance and financial support for research activities. Twenty-six centres were started in different parts of the country for research on various diseases. Their research has made it possible to control tuberculosis and leprosy.

The All India Institute of Medical Sciences (AIIMS) was established to give further impetus to advanced education and research in medicine. It was given the responsibility of undergraduate and postgraduate courses in medicine. Colleges for undergraduate and postgraduate education in most branches of medicine, good research facilities and well-equipped hospitals are the significant features of this institute. The institute also provides medical treatment to the common people at nominal rates. It has established special colleges for training in nursing, and super-speciality centres for treatment of disorders of the heart, brain and eyes. For further development of the medical field, the Medical Council of India was restructured in 1958 and was entrusted with the task of determining criteria for quality of medical education, its supervision and inspection.

These institutes have the responsibility of conducting research on various diseases, developing tests and standardisation of medicines.

Do you know?

In 1969 the Central Council for Research in Indian Medicine and Homoeopathy was established to conduct research and bring about development in the Ayurvedic, Naturopathy, Unani and Homoeopathy systems of medicine. In 1979, this institute was dissolved and replaced by three others, namely, the (1) Central Council for Research in Unani Medicine (2) Central Council for Research in Homoeopathy and (3) Central Council for Research in Yoga and Nature Cure in accordance with their respective clinical methodologies.

Cancer Research : The Advanced Centre for Treatment, Research and Education in Cancer is a branch of the Tata Memorial Centre. It functions as the national centre for treatment, research and education in relation to cancer.

Research institutes – agriculture

In India, research in agriculture had begun as early as 1905. The Indian Agricultural Research Institute was given the status of a University in 1958 and work began in departments such as development of the agriculture sector, research, well-equipped laboratories, soil science, agricultural sciences, economic botany and other departments. Research also began on wheat, pulses, oilseeds, vegetables and many other problems. Its most significant achievement is the fundamental research it has conducted on the methods of taking multiple crops in

a year, which has been of great benefit to farmers.

This Institute maintains a library at its head office in Delhi which is the biggest agriculture-related library in the country.

In the next chapter, we shall study laws related to women, women's contributions and the role of the government with respect to other weaker sections of society.

Exercises

1. Choose the correct option from the given options and complete the statements.

(1) The scientist who developed the Param-8000 supercomputer –
(a) Dr Vijay Bhatkar
(b) Dr R. H. Dave
(c) P Parthasarathy
(d) None of the above

(2) The magazine *Jeevan Shikshan* is published by the following institute –
(a) Balbharati (b) University Education Commission (c) MSCERT

(3) The educational institution called IIT is famous for education in the area of –
(a) Agriculture (b) Medicine
(c) Skilled managers (d) Engineering

2. Complete the activity as per the given instruction.

(1) Complete the table below with details about individuals in the education field and their work.

Individual	Work
First education minister of India	.....
.....	Chairman of the University Education Commission
Prof Sayyad Rauf	.....
.....	Kosbad Project

(2) Obtain information about the National Council of Educational Research and Training, from the internet, and present it in the form of a timeline.

3. Explain the following statements with reasons.

(1) The District Primary Education Programme was undertaken.
(2) The NCERT was established.
(3) The farmers were benefited by the Indian Agricultural Research Institute.

4. Write short notes on-

(1) Indira Gandhi National Open University
(2) Kothari Commission
(3) Bhabha Atomic Research Centre
(4) Balbharati

5. Answer the following questions in detail.

(1) Which programmes were included in the Operation Blackboard scheme?
(2) What role do the agriculture schools/ colleges play in the development of agriculture?
(3) Describe with examples the progress that India has made in the field of medicine.
(4) Write a note on the curricular and co-curricular activities conducted in your school.

Project

Organise a Science Exhibition in your school. Include some activities in it to raise awareness about 'water purification'.

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