

## Quadrant-I (e-Text)

Module Detail	
<b>Subject Name</b>	Education
<b>Course Name</b>	ICT in Education
<b>Course Code</b>	EDU504
<b>Module Name/Title</b>	National ICT policy with respect to focus areas; National ICT curriculum and schemes
<b>Module Code</b>	IIE003
<b>Pre-requisites</b>	Learner should have awareness regarding hardware and software technologies.
<b>Learning Outcomes</b>	<p>After going through this lesson, the learners will be able to:</p> <ol style="list-style-type: none"> <li>1. <i>state</i> the vision, the mission and the goals of National ICT Policy in School Education.</li> <li>2. <i>illustrate</i> the major thrusts of National ICT Policy.</li> <li>3. <i>explain</i> the areas of focus policy statements.</li> <li>4. <i>analyze</i> the strategies to implement the ICT framework into the school environment and the opportunities it presents for development in education.</li> <li>5. <i>explain</i> the national ICT Curriculum in response to the ICT Policy.</li> <li>6. <i>Apply</i> the appropriate approaches to meet the demands of the ICT Curricula.</li> <li>7. <i>analyze</i> the characteristics and scope of ICT Curriculum as a tool for teaching and learning.</li> <li>8. <i>state</i> the major ICT projects initiated in school education by Govt. of India.</li> <li>9. <i>assess</i> the planning and challenges in using ICT Policy.</li> <li>10. <i>evaluate</i> the emerging technology trends and their implication for future education.</li> </ol>
<b>Keywords</b>	Development of ICT, E-strategy, Globalization, School Education, India, MHRD, Policy

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# Contents

1. INTRODUCTION .....	3
2.0 INDIA'S NATIONAL ICT POLICY IN SCHOOL EDUCATION.....	4
2.1 VISION:.....	5
2.4.2 School Management through ICT .....	6
2.4.3 ICT Infrastructure .....	7
2.4.4 Digital Learning Resources .....	7
2.4.5 Capacity Building .....	7
2.4.6 Implementation and Management Framework .....	7
2.4.7 Financing and Sustainability .....	8
2.4.8 Monitoring and Evaluation.....	8
3.0 NATIONAL CURRICULA FOR ICT IN EDUCATION .....	9
3.1 ICT in Education Curriculum for Students .....	9
3.1.1 Class I to V .....	9
3.1.2 Class VI to VIII.....	10
3.1.3 Class IX to XII.....	10
3.2 ICT in Education Curriculum for Teachers .....	10
4.0 MAJOR NATIONAL ICT SCHEMES .....	11
5.0 SUMMARY .....	18

## **1.INTRODUCTION**

In the era of digitization, technology and knowledge have taken the central stage in national and international concerns. The Information and Communications Technology (ICT) is a medium of connecting people and places beyond geographical boundaries. It is playing the central catalytic role in pushing the development process forward. Many countries use ICTs as driver for economic growth, employment and educational development (ITU 2005, Raman et al. 2015). ICT can complement, enrich and transform education for the better (Mitakshara 2009, Purkayastha 2015).

India realized the role of ICT in education in 1984-1985 when the Computer Literacy and Studies in Schools (CLASS) was introduced on pilot basis; the project was later on adopted as a centrally sponsored scheme during the 7<sup>th</sup> Five Year Plan (1993-1998). The scheme was extended in 8<sup>th</sup> plan to provide financial grants to institutions covered earlier and to include new government aided secondary and senior secondary school. In July 1998, a national task force was constituted on information technology and software development (IT task force) to make recommendations on introduction of ICT in education sector. The report recommended the provision of computer system to all educational institutions up to higher secondary schools by suitable investments (about 2-3 %) of total budget during the next five years. On the basis of the recommendation of task force and the advice of the planning commission a new scheme "ICT@Schools" was introduced in 2004. The National Curriculum Framework 2005 also emphasized the role of ICT in education.

Recognizing the importance and the potential of ICT for enhancing outreach and improving quality of education, the Indian Government took a comprehensive look at all possible information and communication technologies for improving school education in India and formulated a National ICT Policy. MHRD released the draft of Policy in January 2008. The policy provided guidelines to assist the States in stimulating the developmental activities by optimizing the use of ICT in schools within a

national framework. It was implemented in all secondary schools in the states, including government and private, during the period of Eleventh Five Year Plan period (2007-2012). The policy itself had three more drafts over the next 3 years - the second policy draft included many revisions - education perspectives, focus on teacher education, support constructivist approaches to integrating ICTs in education, systemic integration rather than just hardware and software procurement, resource rich environment, FOSS etc. The second stresses the importance of teachers' professional development, local content creation, universal access, including ICT capacity building for teachers within teacher pre-service and in-service training programmes, ICT literacy as a precursor to ICT enabled learning. A large part of the feedback comments submitted by ITfC (IT for Change) along with many other organizations were considered. The third policy rolled back several progressive clauses of the second policy. In April 2011, on behalf of eminent educationists across the country, 'IT for Change' submitted a letter on the third policy draft to the Secretary, Department of School Education and Literacy, MHRD. ITfC also submitted detailed in-line comments on the third draft policy. The fourth and final version of the National Policy on ICTS in School Education, which further refined the second draft, was issued by NCERT in June 2012.

## **2.0 INDIA'S NATIONAL ICT POLICY IN SCHOOL EDUCATION**

India's National ICT Policy document is structured with a vision, a mission, 09 broad goals and 08 broad areas of focus. The development of the policy has truly been a public private partnership (PPP), which has involved a lot of hard work, States and local bodies encouraged the participation of individuals and institutions from the private and non-governmental sectors in development of infrastructure, development and/or supply of software and content, informing technology choices and capacity building.

## 2.1 VISION:



The policy is aligned to the vision statement: Preparing youth to participate creatively in the establishment, sustenance and growth of a knowledge society leading to all round socio-economic development of the nation and global competitiveness.

## 2.2 MISSION:



The mission of this policy is to devise, catalyze, support and sustain ICT and ICT enabled activities and processes for improving access, quality and efficiency in the school system.

## 2.3 GOALS:

The goals of the National ICT Policy are as follows:

### **Create**

- an environment to develop a community knowledgeable about ICT - its benefits, dangers and limitations.
- an ICT literate community which can deploy, utilize, benefit from ICT and contribute to nation building.
- an optimal utilization of and optimum returns on the potentials of ICT in education.

### **Promote**

- universal, equitable, open and free access to ICT enabled tools and resources.
- critical use of shared digital resources by students and teachers.
- development of professional networks of teachers and administrators, resource persons and schools to catalyze and support resource sharing and management to improve efficiencies.

- research, evaluation and experimentation in ICT tools and ICT enabled practices.

#### **Motivate and enable**

- wider participation of all sections of society in strengthening the school education process through appropriate utilization of ICT.

### **2.4 FOCUS AREAS:**

The policy expresses statements having various action items which collectively contribute towards nation's basic education achieving its National ICT Vision and hence contribute towards the globally competitive human resource development of India. Following are the themes of focus of ICT Policy:

#### **2.4.1 ICT Skills and Competencies in School Education**

- National ICT Policy defines ICT Literacy in terms of levels of Basic, Intermediate and Advanced Competence.
- Diverse type of techniques, tools, content and resources are planned in ICT Policy.
- States are advised to start the process of launching/creating Elective Courses in ICT for the higher secondary stage and Job oriented courses in ICT for students of the vocational stream at the higher secondary stage.
- ICT Policy is intended to catalyze the cause and attain the aims of Inclusive Education in schools.
- It is aimed to strengthen the existing formal systems of Education emphasizing ICT based instruction available in Open and Distance Learning Systems so as to cater to the needs of such learners.

#### **2.4.2 School Management through ICT**

The policy planned e-governance through:

- Automated and ICT managed administration programme.
- School Education Management Information System (SEMIS) by establishing a nation-wide network as a single window clearing house on all information related to the secondary school system.

### **2.4.3 ICT Infrastructure**

The policy described two types of Infrastructure establishments:

- Core ICT Infrastructure including Hardware, Network and Connectivity, and Software.
- Enabling Infrastructure viz. proper rooms, power supply, telephone connection, furniture, etc.

### **2.4.4 Digital Learning Resources**

- The states are directed to provide ICT enabled tools and resources to all students and teachers. All such resources must conform to the National Policy on Open Standards of the Government of India (<http://egovstandards.gov.in>).
- The development of digital learning resources and the use of interactive ICT tools e.g. virtual laboratories are recommended.
- Suitable open standards for web based sharing and appropriate norms for free access are planned to be defined.
- The school library will search, collect and categorize digital resources and make them available to the teachers and students.

### **2.4.5 Capacity Building**

- A phased programme of capacity building of In-Service Teachers is planned including the induction trainings and the refresher trainings.
- All pre-service teacher education programmes are planned to have a compulsory ICT component and an orientation and training of Teacher educators to use ICT.
- Capacity building of School Heads in processes leading to automation of administration, management and in the implementation of School Education Management Information System (SEMIS).
- Capacity building of State/District Education Department personnel at all levels is planned for ICT implementation and sustenance.

### **2.4.6 Implementation and Management Framework**

- National ICT Policy tasked Programme Monitoring and Evaluation Group (PMEG) of the Department of School Education & Literacy,

MHRD with the overall responsibility of guiding the implementation of the ICT programme in schools across the country.

- An Inter-Ministerial Group is responsible of guiding technological choices and specifying cost effective and optimum infrastructure and connectivity.
- National and State level educational agencies develop curriculum, resources, and undertake capacity building programmes.
- The States have a two-fold task: Define norms, standards, guidelines and frameworks to implement the policy in an effective manner and assist and monitor the implementation of the ICT policy by drawing up a Programme of Action (POA) and an appropriate incentive scheme for teachers, students and schools.
- As a variety of technical, educational, financial and administrative tasks are involved in implementing the policy; the concerned Departments, a reputed engineering Institute of the State, University Departments, etc. form the advisory group.
- Inter-ministerial group at the national level suggests the Norms, Standards and Procedures to be adapted by the States.
- Build, Own, Operate and Transfer (BOOT) models for ICT infrastructure may be used to maximize coverage of the programme in schools in the shortest possible time.

#### **2.4.7 Financing and Sustainability**

Appropriate allocations through both Centrally Sponsored as well as State schemes are stated in this policy. These can be supplemented through public private partnerships and as part of corporate social responsibilities. Total Cost of Ownership (TCO) analysis of the programme should be done to gauge its viability and guide corrections in future implementation strategies.

#### **2.4.8 Monitoring and Evaluation**

- The Advisory Group constituted by the States identifies the criteria, performance measures, periodicity of monitoring/measurement, methodology to be adopted and reporting mechanism.



- The States identify an independent third party for evaluation of the programme at appropriate stages.
- The results and findings from the monitoring, evaluation and research are widely disseminated and used to make mid course corrections in each aspect of the ICT programme.

### **3.0 NATIONAL CURRICULA FOR ICT IN EDUCATION**

The present curricula for ICT in Education for teachers and students have been developed by NCERT. It aims at recognizing the goals of the National Policy of ICT in Schools Education, the National Curriculum Framework (2005) and the recommendations of Digital India Campaign. It was piloted in 588 Navodaya Vidyalaya for one year. 805 MRPs/ KRPs of thirty states were oriented on roll-out of ICT curriculum for students and teachers in the respective states.

#### **3.1 ICT in Education Curriculum for Students**

The curriculum for students focuses on training the student to working with a variety of resources; learning to critically appraise information and resources; and making safe, productive, ethical and legal use of these resources a habit.

The curriculum organization includes four strands:

1. Connecting with the world
2. Connecting with each other
3. Creating with ICT
4. Interacting with ICT

The scope of all these areas remains the same as that for teachers. In terms of activities however, the syllabus clears content in a different way, taking into consideration the age profile of students, their specific needs and the objective of preparing them for their future.

##### **3.1.1 Class I to V**

As per the recommendations of NCF 2005, ICT is not recommended to be offered as a separate course at primary level. Rather ICT based games are integrated into core subjects so that students learn ICT incidentally along with learning of their subjects.

### **3.1.2 Class VI to VIII**

A separate ICT in Education course is recommended for class VI to VIII and it enables students to negotiate a range of devices, tools, application, information and resources. Three sessions per week are fixed for the curriculum.

### **3.1.3 Class IX to XII**

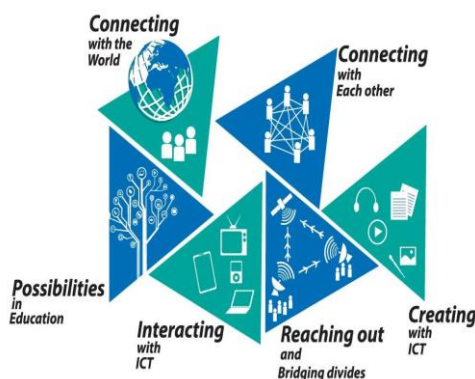
As vocational education is part of class 9 to 12, this ICT course is recommended to be extended as vocational course which will follow the rules and norms of vocational education courses with respect to time allocation, certification, and methodology etc.

If a student or school is not opting for vocational education, even then ICT is to be integral part of class 9 to 12 curriculum.

### **3.2 ICT in Education Curriculum for Teachers**

ICT Policy designed an enhanced exposure to teachers to provide information and resources to them for constant professional support, improved teaching-learning-evaluation-tracking and increased productivity. The six learning strands for teachers are:

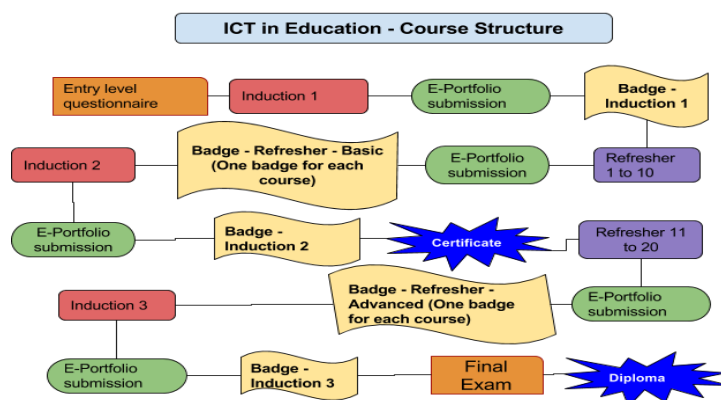
1. Connecting with the world
2. Connecting with each other
3. Creating with ICT
4. Interacting with ICT
5. Possibilities in education
6. Reaching out and bridging divides



The curriculum has a series of short induction and refresher courses across the six strands and ensuring together the basic, intermediate and advanced levels of competence.

*The Course structure* is planned as three inductions and twenty refreshers leading to a diploma in ICT in Education. Induction courses are conducted in face to face mode whereas State (SCERTs/ SIEs) may chose to conduct the refreshers in face to face or in online mode.

- Induction 01 (Basic Induction Course: For beginners) – 10 days (04 credits)
- Refresher 01 -10 (Basic Refresher Courses: For all teachers) – Each refresher 40 hours: 24 hrs of transaction and 16 hrs of project & presentation (20 credits)
- Induction 02 (Intermediate Induction Course: For all teachers) – 05 days (04 credits)
- Refresher 11-20 (Advanced Refreshers) – Each refresher 40 hours (20 credits)
- Induction 03 (Advanced Induction Course) – 05 days (04 credits)



## 4.0 MAJOR NATIONAL ICT SCHEMES

Various initiatives have been taken by the Government of India for boosting the use of ICT in school education.

- IGNOU and the National Open School, have initiated efforts to incorporate Tele Conferencing as a component of instruction.

- Ministry of Human Resource Development, Information & Broadcasting, the Prasar Bharti and IGNOU launched Gyan Darshan (GD) jointly in 2000 as the exclusive Educational TV Channel of India.
- Gyan Vani is an educational FM Radio channel launched in 2001 to broadcast educational, curriculum based programmes.
- EDUSAT, launched in 2004 by the Indian Space Research Organization, is the first Indian communication satellite built exclusively to serve the educational sector.



Source: <https://highereducationplus.com/samsung-adds-200-new-samsung-smart-class-across-the-country/>

- Recognizing the importance of digital literacy in rural India, in 2013 Samsung India launched a Smart Class initiative in collaboration with Navodaya Vidyalaya Samiti. The initiative is available across 500 Jawahar Navodaya Vidyalaya Schools.
- The Ministry of Human Resource Development (MHRD) has launched a National Repository of Open Educational Resources (NROER) in 2013. It intends to reach the unreached, include the excluded and prioritizes to extend education to all. It offers resources for all school subjects and grades in multiple languages.



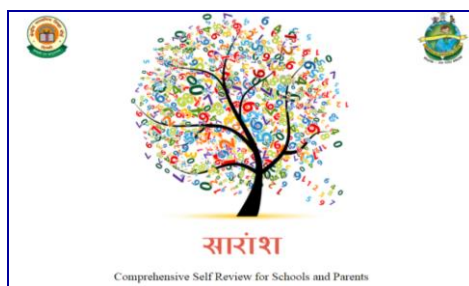
Source: <http://edtechreview.in/news/561-national-repository-of-open-educational-resources-by-mhrd>

- NCTE revised Regulations - Norms and Standards in 2014 with a view to achieving planned and co-ordinate development of the teacher education system throughout the country.
- Mapping of Teacher Education Institutions (TEIs) for providing comprehensive status of 18,000+ recognised TEIs spread across the country in the public domain, a Geographical Information System (GIS) has been introduced online.
- Ministry of HRD Organized National Conference on ICT in School Education in 2015 and launched commendable technical advancements namely e-Pathshala, Saransh, Shala Siddhi, Shaala Darpan.
- E-Pathshala has been developed by NCERT for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals etc. through website and mobile app.



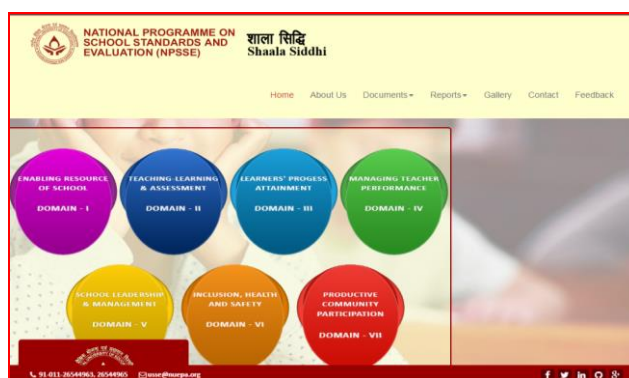
Source: <http://epathshala.nic.in>

- Saransh is a decision support system developed by Central Board of Secondary Education (CBSE) to allow schools to identify areas of improvement in students, teachers and curriculum and take necessary measures to implement change by comparison of results. The mobile App for Saransh enables the parents and students to look at and compare their results vis-a-vis school, state and national level.



Source: <https://saransh.digitallocker.gov.in/>

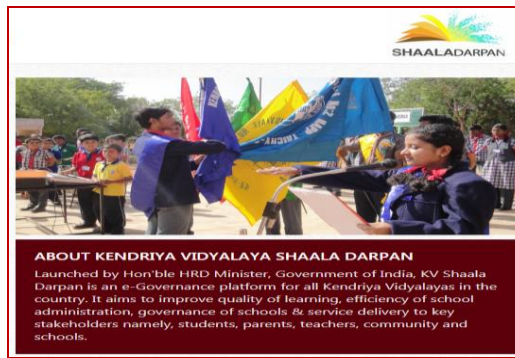
- Shaala Siddhi is a National Programme on School Standards and Evaluation (NPSSE) for school evaluation leading to school improvement. National University of Educational Planning and Administration (NUEPA) developed a web portal for the framework to enable all schools to engage in self-evaluation in the key domains.



Source:

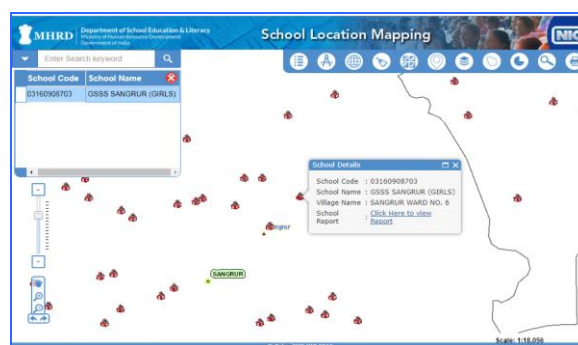
<http://shaalasiddhi.nuepa.org/shaalasiddhi/Account/ShaalaSiddhiLogin>

- The first phase of “Shaala Darpan Project” to cover all the 1099 Kendriya Vidyalayas was launched in 2015. The same 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.



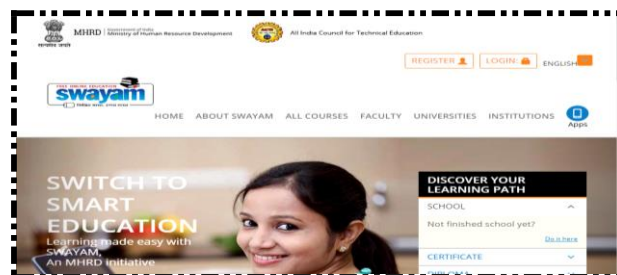
**Source: [darpan.kvs.gov.in/shaladarpan](http://darpan.kvs.gov.in/shaladarpan)**

- During the National Conference on ICT in 2015, Hon'ble HRM announced the initiative of "I Share for India" inviting interested groups/agencies/organizations/community to participate in the creation of educational resources pool for School and Teacher Education.
- The Government formulated a New Education Policy 2016 to meet the changing dynamics of the population's requirement with regard to quality education, innovation and research, aiming to make India a knowledge superpower.
- GIS Mapping with an aim to ensure universal access to schools within a reasonable distance of any habitation, the Geographic coordinates of school along with the school information available in UDISE is being uploaded on the school GIS Web enabled platform i.e. <http://schoolgis.nic.in> from 2016.



Source: <http://schoolgis.nic.in/map.html>

- A Massive Open Online Courses (MOOCs) platform popularly known as SWAYAM (Study Webs of Active learning for Young Aspiring Minds) has been launched in 2017. SWAYAM seeks to bridge the digital divide for students of school, under-graduate, post-graduate and professional courses who not been able to join the mainstream of the knowledge economy. The courses hosted on SWAYAM are in 4 quadrants – (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts.



Source: <https://swayam.gov.in/>

- The SWAYAM PRABHA is a group of 32 DTH channels devoted to telecasting of high-quality educational programmes from July 2017 on 24×7 basis using the GSA15 satellite.



Source: <https://www.swayamprabha.gov.in/>

- Department of School Education and Niti Aayog jointly developed a School Education Quality Index (SEQI) in 2017 to focus on improving education outcomes as the principle aim of school education policy.



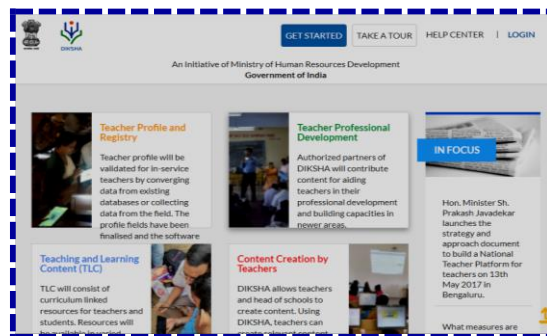
Composition of the SEQ:

Category	Domain	Number of indicators	Total weight of Domain
1.Outcomes	1.1 Learning outcomes and Quality	12	360
	1.2 Access outcomes	7	140
	1.3 Equity outcomes	10	150
2.Governance and Management	2.1 Governance processes	15	350
Grand total =		44	1000

The total number of indicators has been kept small in number (44 in total, including 29 'Outcome' indicators and 15 'Governance & Management' indicators). While other parameters are also relevant for assessment of education outcomes, it is desirable to focus on a critical few to begin with, for effective transformation.

Source: <http://social.niti.gov.in/education-index>

- NCTE started Four Year ITEP from 2017-18 for qualitative Capacity Building of School Teachers.
- MHRD launched DIKSHA portal in 2017 which serves as National Digital Infrastructure for Teachers to create training content, profile, in-class resources, assessment aids, and announcement and connect with teacher community.



Source: <https://diksha.gov.in/>

- The Central Advisory Board of Education (CABE) passed a resolution in January 2018 to take steps towards Operation Digital Board to provide interactive digital boards to nearly 15 lakh classrooms across the country for 9<sup>th</sup> standard to post graduate level.



- MHRD has launched an Integrated Scheme for school education- Samagra Shiksha in May 2018, which subsumes the three erstwhile Centrally Sponsored Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education, from the year 2018-19. This program unifies learning from the pre-school to class 12 levels.



Source: <http://samagra.mhrd.gov.in/>

## 5.0 SUMMARY

ICT can play crucial role in almost all the parts of life including education system. Crafting National ICT Policy in School Education is crucial to stir the ICT sector in the right direction. The present module is an attempt to outline the National ICT Policy in School Education. The policy framework is broad and has clear Vision, Mission and Strategy Statements.

Responding to the ICT Policy, National Curricula have been structured. Given the dynamic nature of the field, the ICT curriculum is generic by

design and focus on a broad exposure to technologies aimed at enhancing the creativity and imagination of the learners. It is built around a set of guiding principles, enabling any school system to provide the right exposure to emerging technologies to build capabilities in teachers and students, not only to use technology comfortably, but also employ them judiciously to enhance their teaching and learning. The teachers' curriculum emphasizes the involvement of teachers in the creation of e-content, its sharing with peers and its critical evaluation. For the student, it is an initiation into the world of information and creative technologies and an opportunity to shape career pursuits.

The Government of India has launched a number of projects to improve the quality and access to education. However, an overview of the ICT policy initiatives of the Central Government as well as state governments, will reveal that though there has been considerable progress in incorporation and institution of ICT tools in education programmes, there is still a huge gulf between the initial projected progress and hard reality.

The challenge ahead is to ensure substantial investment to improve the current scenario of access, equity and quality of ICT in School Education. A well coordinated ICT Policy leading to a practical and dynamic implementation can lead India to achieve MDGs.

### **Quadrant-III**

#### **(Learn More/Web Resources/Supplementary Materials):**

##### **Books, articles, research papers, journals etc.:**

Department of School Education and Literacy (2012). National Policy on Information and Communication Technology (ICT) in School Education. MHRD, Government of India, NewDelhi. Retrieved from [http://mhrd.gov.in/sites/upload\\_files/mhrd/files/upload\\_document/revised\\_policy%20document%20ofICT.pdf](http://mhrd.gov.in/sites/upload_files/mhrd/files/upload_document/revised_policy%20document%20ofICT.pdf)

ITU (2005). World Summit on the Information Society: Outcome Documents, Geneva 2003 - Tunis 2005.

Kumari M. (2009). Policy Coherence in the application of ICTs for Education in India & South Asia. Price Whitehouse Coopers (PWC).

Purkayastha C. (2015). ICT: For Better Education. Abhinav International Monthly Refereed Journal of Research in Management & Technology. 4(6): 14-19.

Raman R., Venkatasubramanian, S., Achuthan K., and Nedungadi P. (2015). Computer Science (CS) Education in Indian Schools: Situation Analysis using Darmstadt Model. ACM Transactions on Computing Education 15 (2): 7.1-7.36.

##### **Links to web sites giving additional readings, Wikipedia, blogs, open source content etc.:**

<http://ictcurriculum.gov.in/>

[http://mhrd.gov.in/ict\\_policy\\_docs](http://mhrd.gov.in/ict_policy_docs)

[http://www.ncert.nic.in/announcements/notices/pdf\\_files/ict%20curriculum.pdf](http://www.ncert.nic.in/announcements/notices/pdf_files/ict%20curriculum.pdf)

### **Quadrant-IV: (Self-Assessment)**

#### **• MULTIPLE CHOICE QUESTIONS**

1. Scientific method and means to store, process and transmit vast amounts of information in seconds with help of electronic equipments is called:
  - a)Information Technology
  - b)Information and Communication Technology
  - c)Biotechnology
  - d)Mass Technology
  
- 2.Information and Communication Technology (ICT) includes:
  - a)On line learning
  - b)Web Based Learning
  - c)Learning through the use of EDUSAT
  - d)All of the above
  
3. Educational institutions, libraries, hospitals and industries store concerned information by:
  - a)Operating System
  - b)Word Processing
  - c)Data Management
  - d)Informing System
  
4. Which portal has been created which will serve as the National Digital Infrastructure for Teachers?
  - a)Margdarshan
  - b)Diksha
  - c)Shikshak
  - d)None of these
  
- 5.What is the name of the web portal developed by the National University of Educational Planning and Administration (NUEPA) to enable schools to evaluate their performance in the key domains under the prescribed framework?
  - a)Shaala Siddhi
  - b)Shaala Darpan
  - c)e-PATHSHALA
  - d)Kala Utsav

6. What is the full form of the SWAYAM – an indigenous IT platform for hosting the Massive Open Online Courses (MOOCs)?
- a) School Website of Active Lesson for Youth Aspiring Minds
  - b) Study Webs of Active Learning for Young Aspiring Minds
  - c) Student Website of Active interaction for Young Aspiring Minds
  - d) Study Webs of Active Learning for Young Active Minds
7. SWAYAM is a portal for?
- a) Promoting high quality education
  - b) Improving access to high quality education
  - c) Telecasting high quality educational content free of charge
  - d) Both B and C
8. Which of the following is correct statement?
- a) A set of instructions is called a programme
  - b) Computers can be used for diagnosing the difficulty of a student in learning a subject
  - c) Psychological testing can be done with the help of computer provided software is available
  - d) All of the above
9. The National ICT Policy w.r.t. Infrastructure proposed:
- a) Core ICT Infrastructure
  - b) Enabling Infrastructure
  - c) Both A and B
  - d) Neither A nor B
10. National ICT Policy in School Education defines ICT Literacy in terms of:
- a) Knowledge of ICT tools and techniques
  - b) Basic, Intermediate and Advanced Levels of Competence
  - c) Using a variety of software applications and digital devices
  - d) None of the Above
11. Programme Monitoring and Evaluation Group (PMEG) of MHRD is tasked with:
- a) The overall responsibility of Implementation and Management of ICT Policy
  - b) Financing ICT Policy
  - c) Reviewing ICT and education related issues
  - d) Preparing Models for ICT Infrastructure

12. Rashtriya Madhyamik Shiksha Abhiyan (RMSA) is the programme rolled out by:

- a)CBSE
- b)CIET
- c)NCERT
- d)MHRD**

13.What is the full form of USB as used in computer-related activities?

- a)Universal Security Block
- b)United Serial Bus
- c)Universal Serial Bus
- d)Ultra Security Block**

14.What is the name of a webpage address?

- a)Directory
- b)Protocol
- c)Domain
- d)URL**

15. The content of a portfolio is largely based on:

- a)The Goal and Purpose of the Portfolio
- b)The Characteristics of the Student Evaluated
- c)The Length of the Portfolio
- d)None of the Above

• **TRUE & FALSE STATEMENTS**

16. MS Word is hardware.

- a)True
- b)False

17.ICTs help improve the quality of education.

- a)True
- b)False

18. EDUSAT was launched in 2004 by the Indian Space Research Organization (ISRO).

- a)True
- b)False

19. National ICT Curriculum for Teachers recommended Induction Courses to be conducted in face to face mode only.

- a) True
- b) False

20. Which of the following statements, regarding the term ICT is/are TRUE?

P: ICT is an acronym that stands for Indian Classical Technology.

Q: Converging technologies that exemplify ICT include the merging of audio-visual, telephone and computer networks through a common cabling system.

- a) P only
- b) Q only
- c) P and Q
- d) Neither P nor Q

**Answer: 1. (B), 2 (D), 3 (C), 4 (B), 5 (A), 6 (B), 7 (D), 8 (D), 9 (C), 10 (B), 11 A, 12 (C), 13 (C), 14 D), 15 (A), 16 (B), 17. (B), 18 (A) , 19 (A), 20 (B) .**