



# ‘NEW EDUCATION POLICY 2020 AND DIGITAL INITIATIVE GYANKUNJ PROJECT E-CONTENT FOR DIGITAL EDUCATION IN GUJARAT ‘

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**Abstract :** The National Education Policy (NEP) 2020 is the long awaited policy after 1986. The policy brings a revolutionary change in all the dimensions of education and the importance given to education technology in the NEP is welcome. To develop a knowledge society we have to inculcate the required skills among the children which are our legacy. We have to develop among them the power to imagine, to explore, and create a more sustainable world. In this regard the policy has given some important recommendations in the extensive use of technology in teaching and learning process. Therefore the present paper is based on policy document (NEP2020) analysis and highlighted some important vision, mission, policy goals towards ICT & building a self reliant Gujarat by creating an Educational Digital Infrastructure and Capacity in Gujarat state.

Gyankunj is a school digitalization programme to enhance classroom interactivity and teaching-learning process with the help of technology tools, like Projector, Interactive Infrared Camera, Laptop, Speaker, Whiteboard, Wi-Fi Router Extender etc. It aims to reinforce teaching-learning and evaluation process. This paper publish for know about gyankunj project and its objectives.

**Keywords :** gyankunj , ict ,digitalization, education

## Introduction :

Some of the more tangible initiatives recommended by the NEP are: a) Extension of existing e-learning platforms like DIKSHA and SWAYAM to provide teachers with user-friendly assistive tools like two-way audio and two-way video for monitoring the progress of pupils; b) Development of a digital repository of coursework, simulations, game-based learning, augmented reality and virtual reality; c) Development of virtual labs using DIKSHA and SWAYAM, particularly, to make such programs accessible to students and teachers belonging to socio-economically disadvantaged groups through preloaded tablets; d) Provision of a new National Assessment Centre to design and implement new assessment frameworks that incorporate 21st century skills.

However, when it comes to addressing the digital divide as discussed previously, the NEP recommends use of television, radio and community radio for 24\*7 broadcasts of educational programmes, including in regional languages. Whether such programmes can replace online classes and e-learning tools, and provide the same quality of education to students who do not have access to smartphones or the internet is up for debate. Certainly, the NEP doesn't seem to offer any specific recommendations to bridge the gender gap in digital literacy, nor does it directly address the physical and mental health consequences of online classes. It also doesn't seek to cover issues faced by students with disabilities while accessing online learning methods.

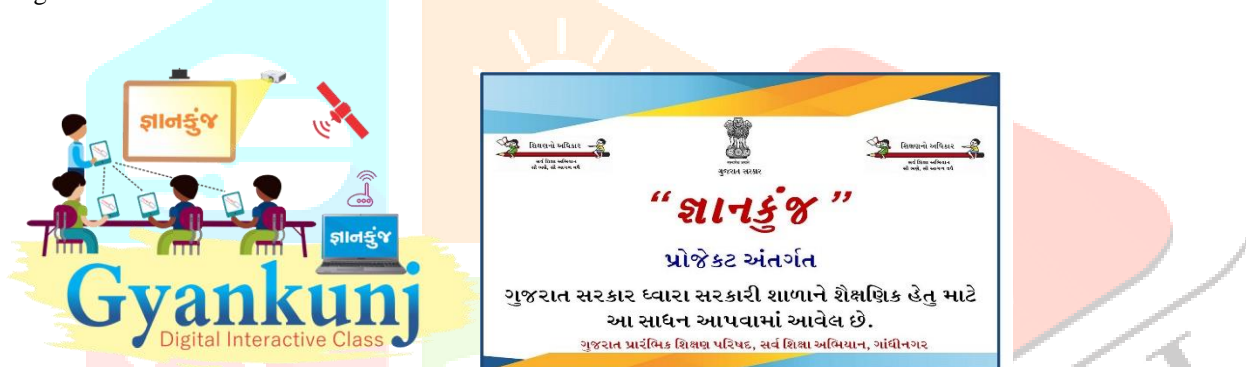
It can be concluded that though the NEP offers some progressive initiatives for development of e-learning tools and seeks to encourage equal access to technology, it misses the mark when it comes to addressing the grave structural challenges that characterise digital learning in India. Going forward, it is imperative to bring about convergence between the goals of the NEP and flagship schemes like Digital India that seeks to expand access to communication infrastructure and internet connectivity across the

country. A key focus, therein, has to be on bridging the gender gap in internet usage and access to smartphones, and simultaneously making digital learning disability-friendly.

In Gujarat state 'Gyankunj' is a school digitalization program to enhance classroom interactivity and teaching-learning process with the help of technology tools, like Projector, Interactive Infrared Camera, Laptop, Speaker, Whiteboard, Wi-Fi Router etc. Initially, this program is executed at Class 7 and Class 8 of 1609 schools (1500 Schools + 109 KGBVs) to accelerate the efforts of Gujarat Government in Digital Mode of Education. It aims to make ease of understanding for each unit of curriculum in classroom itself by using technology as a medium. Gyankunj model uses whiteboard, laptop, projector, IR camera and interactive software for interactivity in classroom, the laptops are connected wirelessly or via USB or serial cables. A projector connected to the laptop displays the desktop image on the whiteboard and IR camera uses high speed image sensors which can intelligently track and learn the environment and allow for a seamless information control with any display with real-time interaction and writing speed without any lag and superior interactive performance. The IR camera accepts touch input from infra red enabled pen. It also helps schools, teachers and students to stand globally competent with the help of education technology. It includes,

- Interactive e-Class with smart board developed through technology at school level
- Facilities of projector, infrared camera, laptop, speaker, smart board, Wi-Fi router in 3173 classrooms of Std.7 and Std.8 at 1609 Government Primary Schools across the State
- Provided 10,000 tablets to students of std.7 and std.8 at 100 schools for learning without burden
- Teaching-learning through e-Content and resources available through internet for Std.5 to 8
- Ease of curriculum understanding through technology

The initiative of "Gyankunj" project has been launched by the Hon'ble Chief Minister of Gujarat on 5th September, 2017 - Teacher's Day to accelerate the efforts of Government of Gujarat in the area of digital education inspired from the vision of Digital India.



## Objectives :

There was a growing need to bridge the digital divide and generate awareness among the future generation with the changing technologies. The integration of ICT would call for changes in various aspects of the delivery mechanism. SSA, Gujarat Transformed concept of Computer Aided Learning (CAL) into Gyankunj Classroom Interactivity concept to achieve enhanced interactivity in teaching-learning process of classrooms and to reinforce teaching, learning and assessment through school digitalization.

- To enhance classroom interactivity through advancement in teaching-learning process for Teachers and Students
- To reinforce teaching, learning and evaluation process with use of technology
- To make ease of understanding for each unit of curriculum in classroom itself by using technology as a medium

## Coverage :

The project is implemented in 1,609 Government primary schools, having interactive e-class developed with smart boards using technology in 3173 classrooms of class V to VIII. The 3173 classrooms are spread across all 33 districts and 242 talukas (blocks) across the State. Total 2.85 Lakh students of Class V to VIII are taking advantage of this initiative. With this scheme, the state government ensures it scales operations and increases digital inclusivity of the population. Further, in phase 2, the project is implemented in 12000 classrooms of Std.7 and Std.8 across the state with facilities like Short throw projector, Interactive White Board, laptop, speakers, Learning Management System (LMS), Usage tracking software. With this scheme, the students improve their IT Skills and have an opportunity to learn through the digital content. Our aim is to further improve access to Elementary Education and to achieve 100% enrolment by scaling this initiative to next level.

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## Implementation details :

The project implementation was purely based on principle of demand and supply. The project implemented in schools wherever the teachers are interested and keen to use technology for academic transactions. For this purpose, the teachers applied under Google Form published by GCEE-SSA; to get the Gyankunj class at their schools.

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The Gyankunj project implementation model has been specifically developed to provide holistic IT infrastructure to aid the Teaching-Learning process and as per the requirements of the school and adhering to the ICT vision of the State. Implementation methodology adopted of the state government are presented below:

- Project implementation starts with the Baseline survey which maps the current academic performance of students, infrastructure readiness for setting up the classroom, exposure of teachers and students to computers.
- This is followed by the Site Preparation which includes basic infrastructure like electrical wiring and networking etc. Once these pre requisites are fulfilled, installation of the modular fittings like the IR Camera for Interactivity, Projector, Laptop, White board, Speaker etc is undertaken.
- Training of teachers holds prime importance in ICT@ Schools initiative and computer literacy training is imparted with three different training modules for teachers of all schools.
- A trained TSP (Technical Service Provider) is also deployed by the government in each school for duration of 3 months for initial project handholding.
- For this, online portals are created and recruitment drives with written examinations followed by personal interviews are held to ensure that good talent with requisite skills is employed.
- The required hardware and project software like Multimedia Content is then supplied and installed.
- The final step in this process is an approval via customized FAT, i.e. Final Approval Test by an internal government official ensures all standards and project requirements are met. Teachers are also trained in handling the various hardware and software installed so as to ensure their optimal utilization.

## Components under project :

- Gyankunj model use whiteboard, a computer, a projector, IR camera and interactive software for interactivity in classroom, the components are connected wirelessly or via USB or serial cables. A projector connected to the computer displays the desktop image on the whiteboard and IR camera uses high speed image sensors which can intelligently track and learn the environment and allow for a seamless information control with any display with real-time interaction and writing speed without any lag and superior interactive performance. The IR camera accepts touch input from infra red enabled pen. It also helps schools, teachers and students to stand globally competent with the help of education technology.

## • Interactive Multimedia Content

- The e-Content comprises of various images, videos, animations, virtual labs, demonstration & visualization of activities, self-learning, evaluation and reference material. In addition to this, it also emphasizes on reading, writing and understanding knowledge as per traditional tactics of pedagogy. The e-Content covers more than 450 units of 52 textbooks, more than 3,000 animated videos, 3,000 interactive animations, over 1,000 games on various topics, virtual lab for science experiments and question bank of more than 50,000 questions. Moreover, this e-Content is being telecasted in video form on "Vande Gujarat" digital satellite educational channel, launched with support of BISAG, through Direct To Home (DTH) media under State wide Distance Learning Programme, e-Class. The episodes are also available on YouTube Channel under "Gujarat e-Class" for downloading, the URL for the same is:

- [https://www.youtube.com/channel/UCj\\_MbJEpkmF6FNXPjyZVIOA/videos](https://www.youtube.com/channel/UCj_MbJEpkmF6FNXPjyZVIOA/videos)

## • Online Project Monitoring System

- Web based application (www.gyankunj.org) and mobile app have been deployed for the successful implementation of the entire project. Mobile app can be installed from the Google Play Store. Using this application, the head teacher / nodal class teacher from the school level, logs complaint online for problems related to hardware / software. Under this system, the real-time progress of the Gyankunj project can be ascertained at all levels on the basis of details of the project being updated from the school level.

An online monitoring system has been designed to track following thing.

Real time updates from schools in terms of Commissioning, Pending Calls for maintenance support and progress under training

- Daily Activity Updates from Schools
- Showcasing success story under Repository
- Dashboard available at each level with customized reports
- Clear indications to agencies for quick action
- Ease of assessing Progress & Pending actions on agency side

All processes like hardware complaints, vendor management, SLA compliances, theft replacement, and physical damage cases are tracked using this online tool.

## Impact / Outcome :

**Empowerment of Teachers :** The use of technology-based Learning Solutions has resulted in the following impact on the Teachers:

- **Improved Lesson Delivery:** With the aid of technologies such as Computers and Multimedia Content, the teachers have been able to improve the lesson delivery by making learning process more interactive and increasing attentiveness amongst Students
- **Familiarization with New Tools:** Exposure to new technologies such as Computers, and Multimedia Content Development, the teachers have in turn been able to build technological capacities for faster adaptation in today's world

**Impact on Learners :** The learners as part of the technology-based learning projects have been the largest beneficiary; with receiving benefits such as :

- **Improved Learning Levels:** With the aid of interactive tools including multimedia content, virtual experiments and educational videos, students are able to learn more effectively and at a faster pace relatively
- **Easier Understanding of Difficult Concepts:** With the aid of technologies and visual aids through Multimedia Content, the students are able to understand the difficult concepts especially in Science and Math with relative ease
- **Improved Attendance in Schools:** The use of innovative technologies and the Multimedia Content has been successful in increasing interest levels amongst students. The schools as a result are witnessing more and more students coming to the classroom

The impact of Gyankunj implementation is assessed through Statistical Bureau under directions of General Administration Department (Planning) during 6-7 February, 2018. This third party assessment is carried out through school visit and response to questionnaire designed to measure the impact.

Impact assessment was carried out through Probability Proportionate to Size Sampling (PPS) of 33 districts and 3 Municipal Corporations. Pre-designed questionnaires were filled for 650 students, 163 parents, 326 teachers, 163 school principals/head teachers and 17 non-beneficiaries. Key areas assessed under the survey as per below:

- Availability of equipments allotted under project
- Usage of tools by students and teachers for teaching-learning process
- Usage of e-Content for different subjects
- Structure for maintenance
- Approach of students, parents, teachers and head teachers towards new methodology The results reveal that non-beneficiary students' like to learn through Gyankunj if facility provided to them. The study report has concluded that 100% students can understand the unit taught through Gyankunj facilities and they love to learn through audio-visuals. 100% parents have admitted that their child is excited to go school and opined to have benefits of the method to their child.

## GUJARAT VIRTUAL SHALA :

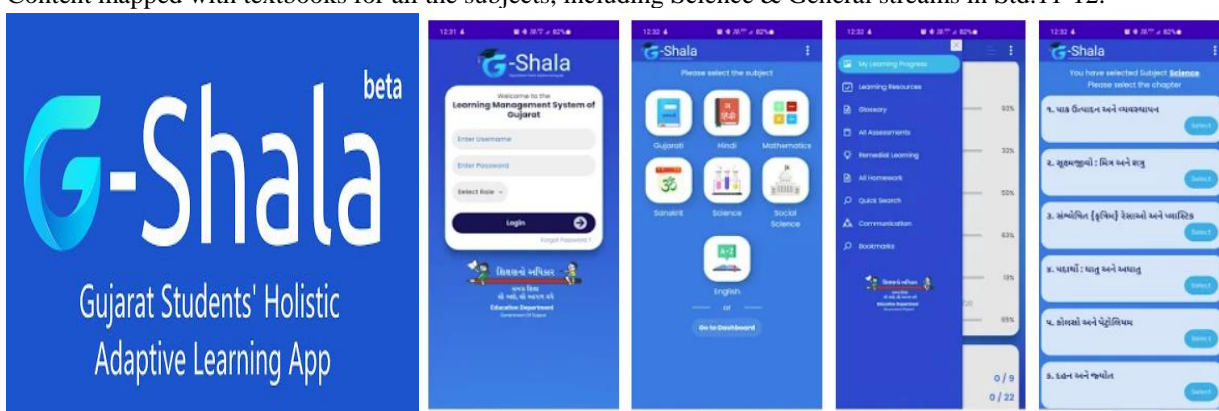
Samagra Shiksha, Gujarat has set up technology enhanced classrooms for elementary schools under Gyankunj initiative that foster opportunities for teaching and learning by integrating learning technology, such as computers, electronic white boards, projectors, Video conferencing specialized software, interactive audio-video systems, etc.

For secondary schools, Samagra Shiksha, Gujarat has launched Gujarat Virtual Shala (GVS) program. Under GVS program, the subject sessions are being conducted centrally & streamed over various online platforms / mediums to the schools without subject teachers, benefitting students with better learning opportunities. Under GVS School level smart classrooms will be set up to stream the live virtual classes.

G-Shala : Gujarat - Students' Holistic Adaptive Learning App is an eContent App for Standard 1 to 12 embedded on Learning Management System (LMS). G-Shala is designed & developed by Gujarat Council of School Education, Samagra Shiksha, Education Department, Government of Gujarat based on Gujarat State Education Board (GSEB) syllabus.

The Government of Gujarat has planned to provide education to more than 56 lakh students of Std. 1 to 12 who have a smartphone or tablet at home through Home Learning through Learning Management System G-SHALA and e-Content. G-SHALA Application Download link will also be provided here. G-SHALA Application Arrangements made by the Gujarat Education Department for students of Std. 1 to 12 who have a smartphone or tablet to get education through Home Management Learning Management System G-SHALA (Gujarat Students Holistic Adaptive Learning App). G-SHALA Gujarat The Gujarat Student Holistic Adaptive Learning App, an innovative project for home study learning for students sitting at home during the time of Corona, has also been launched in the state of Gujarat.

G-Shala is a platform-agnostic and device-independent App which provides digital interactive 2D/3D augmented e-Content mapped with textbooks for all the subjects, including Science & General streams in Std.11-12.



The G-Shala App also offers guided learning with reference/ supplementary materials, topics mapped with Learning Outcomes, virtual simulations for laboratory experimental simulations, pre-classroom modules for teachers, instructor Led videos as well as self-learning & self-assessment modules for students.

E-content and learning management system has been prepared for students of Std. 1 to 12 under G-SHALA Project. The Gujarat Education Department has been adopting innovative projects like Mission Vidya, Teacher-Student Online Attendance, Home Learning, Periodic Assessment Test for the last two years with a special focus on improving the quality of primary education.

### CONCLUSION :

In Modern times every person wants to do something new in their traditional way of life and these results in new discoveries. According to, the Chinese Proverb “Novelty is the Life“ means Innovations is the life. The objectives of education have been changed in times. The student is kept at the Centre of education. In the age of 21st century, the focus of technology is on adopting the student-centered approach.

According to the study of 200 Gyankunj and 200 Non-Gyankunj Schools, Gyankunj is interpreted as “better engagement” that leads to the “teaching-learning process” becoming “easy”. And some student was in favor of Hand-Study-Material for learning due to unawareness of Educational Technology. There are several project implementations in education department, but the Gyankunj project is going to most successful nowadays. And this project proves that we are able to Improving Quality in Education through Educational Technology at Elementary School Level.

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