

# School Digitalization Programs for Interactive Classroom and Teaching-Learning Process through Technology

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## Abstract

Various efforts are being made to make education more qualitative. Primary education plays a very important role in quality education. Effective education is essential for quality in education, because primary education is the foundation of education. Therefore, various efforts are being made to strengthen this foundation so that education can be made more effective and quality. As part of this effort, a project was implemented by the Government of Gujarat. This was named "Gyankunj". The purpose of which is to provide education to the children of upper primary school through the medium of educational technology as well as to provide equal education to the children of rural and urban areas.

**Keywords:** School Digitalization Program, Interactive Classroom, Computer Aided Learning (CAL), K-Yan (Knowledge Yantra), Gyankunj.

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## INTRODUCTION

The present is the time of science and technology. In present time, new changes are expected day by day in the field of education. The teaching process has become student-centered. Today, education through Science and Technology, Psychology, Computer and Pedagogy has become Indispensable. It is important to be thoughtful, to be aware of the ongoing technological changes in the field of education. At present, computers are used in all fields, from offices and businesses to educational world. In today's age, it is essential for everyone to have knowledge of operating computer.

The initiative of "Gyankunj" project has been launched by the Hon'ble Chief Minister of Gujarat on 5<sup>th</sup> 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. 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. Total 2.85 Lakh students of Class V to VIII are taking advantage of this initiative.

### History of Interactive Classroom and Teaching-Learning Process through Technology

When any project is launched then they projects are come with some goal. To achievement of

defined goal, Steering Committee is built "Blue Print" of project with all possible thinking of success".

There are several project implemented by government in education for Improving Quality in Education through Educational Technology.

- Computer Aided Learning (CAL) Project
- K-Yan (Knowledge Yantra) Project
- Smart Interactive Classroom Project
- Gyankunj Phase – I
- Gyankunj Phase – II (Now)

### Computer Aided Learning (CAL) Project - 2011 | Five Year

The Computer Aided Learning Program (CAL) creates an environment, where learning and assessment is fun and the opportunities to learn is equitable among the rural and urban children. The CAL is primarily introduced in rural government elementary schools covering the classes 1 to 8 to attract and retain children and also in the process, enhance the quality of learning by making "Learning Play", "Assessment Fun" and "Equal knowledge for all".

Table: 1 shows the CAL project implementation year wise summary with how many Schools included in this project [2].

Table-1

CAL Project Implementation Details	
Year	No. of School
2003-04	814
2005-06	500
2006-07	4061
2009-10	275
2011-12	14856
<b>Total</b>	<b>20502</b>

**The basic objectives**

- To make the Students and Teachers familiar with Computer
- To teach the subjects through computers
- To use the educational software for hard spots
- To enable the government school students especially rural area students to be at par with the urban and advance school student

**CAL Project's Tools | 2011**

- 5 Computer Sets with 15 inch Monitors
- 1 Server Computer with 5 Sharing Computer
- 42 inch LCD TV
- 1 Ku Band Dish Antenna
- 1 Printer
- 11 Computer Table
- 11 Plastic Chair

**Limitation of CAL Lab -2011 Project**

- Non Computer Background Teaching Staff
- Unskilled Teacher
  - All "Bal Guru" Teachers are Untrained
    - Without Professional Course
    - Recruitment in Year till 1998
  - All "Vidhya Sahayak" Teacher are Skilled
    - Without clearing Teacher Aptitude Test
    - Recruitment in Year 1998-2010
- No Manpower Support
- Lack of Computer Instructor/Teacher
  - Still not any recruitment in Gujarat at Standard I to XII
- Lack knowledge of Information Technology
- Less use of CAL Lab (For Ex. 2 or 4 Lecture in week)
- Disturbance occurred during Transfer: Class to CAL Lab
- Unawareness with Computer & Educational Technology

At last all items/product which is no more usable condition of CAL Lab Project going to "E – Waste" in Year 2019.

After the removing limitation of CAL Lab - 2011 Project, Government launch new approach called K-Yan project for Improving Quality in Education through Educational Technology.

**K-Yan (Knowledge - Yantra) Project**

- Launched in 2004
- The highly acclaimed K-Yan was the world's first integrated multimedia device for group learning needs.
- K-Yan, or 'Knowledge Vehicle' is a device that integrates a full-feature multimedia computer with
  - Projector
  - TV Tuner
  - Audio System and
  - DVD Player in a single
  - Easy-to-use portable product, with an ultra-large display.

**Launched Timeline**

- January 2004, K-Yan V.1 Launched
- May 2005, K-Yan V.2 Launched
- March 2007, K-Yan V.4 Launched
- March 2011, K-Yan UV Launched
- September 2012, K-Yan Pro Launched

**Limitation of K-Yan Project**

- High Cost
- Hardware/Software Support is chargeable
- No Manpower Support
- Teacher must have computer background
- Lack of Computer Instructor/Teacher
- **Invisibly of content problem during writing on board**

K-Yan Set up in front of Smart Board. When teacher teaches, a teacher's shadow reflects on board. So that student can't see the content on board.

- **Calibration Problem**

K-Yan Set up in front of Smart Board on Table. Due to any of reason if table or K-Yan is moving from their place then must need to re-calibration. If you not do Calibration then Pointing of Stylus (Digital Pen) is not pointing properly on Smart Board.

**Note:** First time Government of Maharashtra lunched K-Yan (Knowledge - Yantra) Project in Primary and Upper Primary Schools. But Government of Gujarat not implements this project due to above limitation of the project.

After the removing limitation of K-Yan Project, Government launch new approach called Smart Interactive Classroom project for Improving Quality in Education through Educational Technology.

**Smart Interactive Classroom Project**

The government provides the following two sets of equipment for two classrooms per selected school which includes std 7<sup>th</sup> class and std 8<sup>th</sup> class.

- Projector

- IR Camera
- White Board

Using an IR camera is the best way to create Smart Interactive Classroom. Because they scan an area of smart interactive board that used for Teaching-Learning process.

#### Limitation of Smart Interactive Classroom Project

- Lack of Computer Instructor/Teacher
- No Manpower Support
- PC or Laptop not provided
- No any technical support
- Lake of Training
- Not provide any Maintenance Cost

After the removing limitation of Smart Interactive Classroom Project, Government launch new approach called Gyankunj Project (Phase – I) for

Improving Quality in Education through Educational Technology.

#### Gyankunj Project

Gujarat government has launched “Gyankunj Project” to promote digital literacy among primary students in all government aided schools in the state. All the primary schools will be harnessed with high class facilities across the state.

The aim of Gyankunj project is to provide the Smart Interactive Classroom to replace Traditional Classroom in all the upper primary schools and bridge the gap in education system. This scheme will be roll out by the state education department for Class VII and VIII students in the schools.

Table: 2 shows the Gyankunj project implementation year wise summary with how many classrooms included in this project.

Table-2

Gyankunj Project Implementation Details				
Phase	Year	Gyankunj School	Class Std-7 Covered	Class Std-8 Covered
I	2017	1609	1609	1564
II	2019	5659	5916	6084
<b>Total</b>		<b>7268</b>	<b>7525</b>	<b>7648</b>

[Table: 2 Data collected from Samagra Shiksha Office – Gandhinagar]

#### Gyankunj Project's Tools

The government provides the following two sets of equipment for two classrooms per Gyankunj School which includes standard 7<sup>th</sup> class and standard 8<sup>th</sup> class.

- Projector
- Laptops
- IR Camera
- Smart White Interactive Board
- Stylus
- Lesser Highlighter
- Speaker
- Router

(In year 2019, Government provide additional 4GB RAM)

- E-content take several time to start (20-25 Minutes)
- E-Content not NCERT based
- E-Content not in Regional Language
- E-content used 150 GB Storage
- Lack of Computer Instructor/Teacher
- No Manpower Support

After the removing limitation of Gyankunj Project (Phase– I), Government launch new approach called Gyankunj Project (Phase – II) for Improving Quality in Education through Educational Technology.

#### Gyankunj Project (Phase – II)

- **Benefits**
  - Remove all issue about IR Camera
  - Solved frequently calibration (Project position: Roof Wall)
  - Internet Grant Rs. 10,000/- Per Year (For Gyankunj School)
  - E-Content in Regional Language with NCERT Syllabus and Auto Updating through Internet
  - Teacher's training
  - Laptop Upgraded with 1 TG Hard Disk
  - Laptop Upgraded with 8 GB RAM

#### Gyankunj Project (Phase – I)

- **Benefits**
  - Remove all issue about IR Camera
  - Solved frequently calibration (Project position: Roof Wall)
  - Internet Grant Rs. 10,000/- Per Year (For Gyankunj School)
  - E-Content
  - Training to Teachers
  - One year hardware support
- **Limitation**
  - Laptop 500 GB Hard Disk is not enough
  - 2 GB RAM is not enough

- **Limitation**
  - Lack of Computer Instructor/Teacher
  - No Manpower Support

## 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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