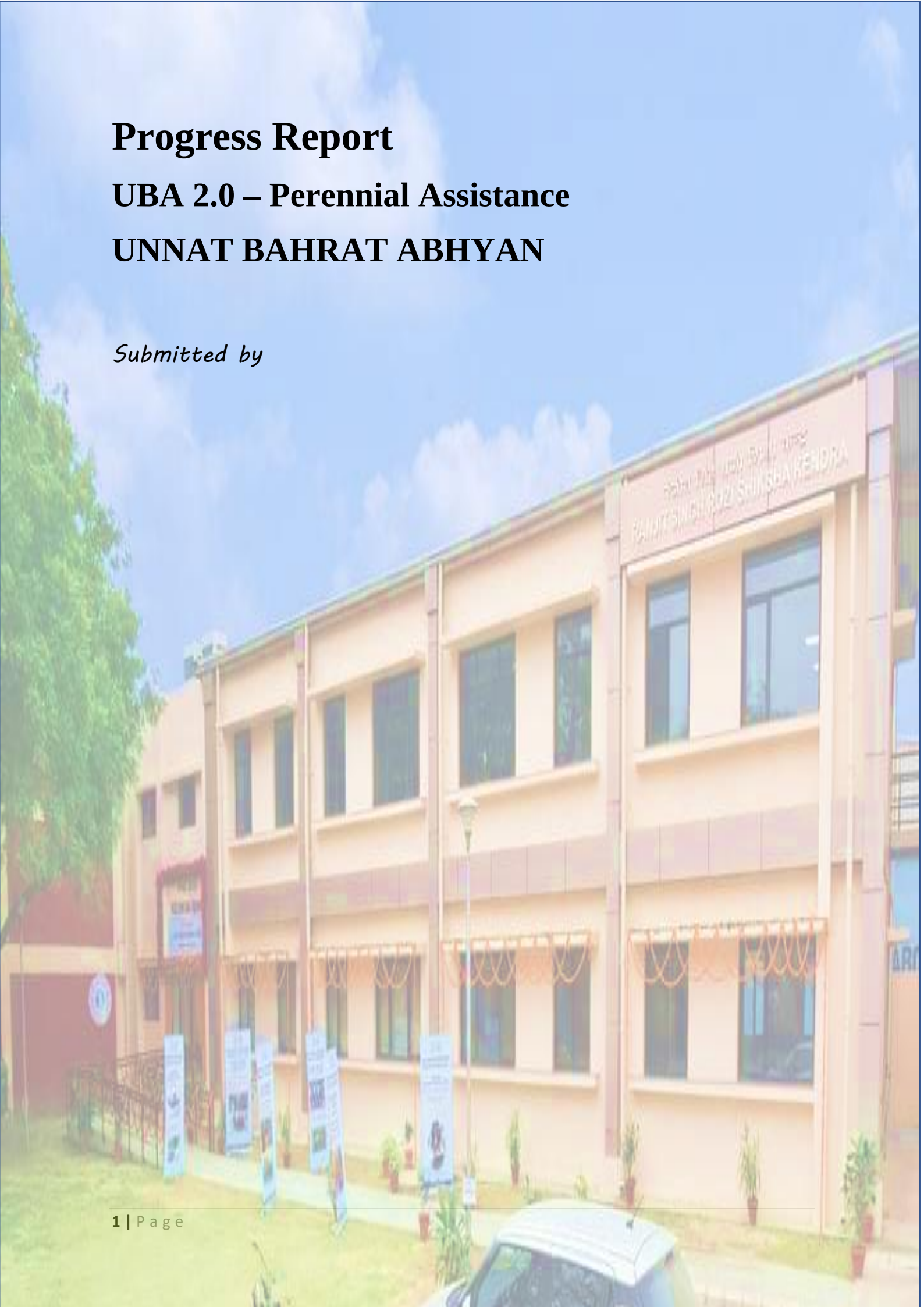
Progress Report

UBA 2.0 – Perennial Assistance

UNNAT BAHRAT ABHYAN

Submitted by



Background

National Coordinating Institute (NCI) launched a Perennial Grant programme for the UBA institutions to give further boost to the rural development activities under Unnat Bharat Abhiyan (UBA). IIT Kanpur was one of the 78 UBA institutions that were awarded the perennial grant assistance in August 2020.

Under the perennial assistance programme, IIT Kanpur proposed to reach out to the rural schools and fill in the gaps that got created during the pandemic. Today the big challenge is that schools were shut down for about two years, and now children experience a detachment from education. While online education arrived as an alternative option, but most of the children from the villages couldn't afford this either in terms of cost or in terms of technically challenged. It appeared that a generation of children lost touch with education, for no fault of their own. An unwanted division in learning is beginning to emerge in our society, between the students coming from rural areas and urban areas. In the post-Covid scenario, the utmost concern is to bring school children back to the main stream of education and bridge the gap of two years of zero learning. According to ASER 2021 report, 65.4% teachers flagged the problem of children being "unable to catch up" as one of their biggest challenges. This project aims to address the learning gaps and set up a replicable and scalable model of online rural education.

Several online platforms emerged for remote learning. Both Central and State governments promoted creation of material for online teaching. However, ASER 2021 report suggests that less than one quarter population in India had internet access for education. The reachability of remote education sharply reduces as one goes further away from cities, and moves down the income ladder. In the adopted villages of UBA, it was fairly evident that the added challenge is that one to one remote teaching is severally limited for teaching rural school children.

Objective

The objective of the project is to reach out to students in rural schools and provide quality education. To address the issue of reachability, group leaning at community or school has been proposed. And to fill the learning gap, a hybrid mode of teaching is suggested where classes are conducted online and occasionally teachers and students meet in person to conduct activities.

Programme

In this model, students assemble at the school which has an IT infrastructure to run online classes. Students study online collectively, and get a real classroom experience. A pilot has been taken up for Class IX children of a government aided school named Ram Janki Inter College, Bithoor and the subjects taught are Physics, Chemistry, Biology and Mathematics.

A Smart Classroom has been set up at the Ranjit Singh Rozi Shiksha Kendra, IIT Kanpur. The programme runs in a hybrid mode in which teachers take classes from the Smart Classroom and infrastructure at school is strengthened as well.

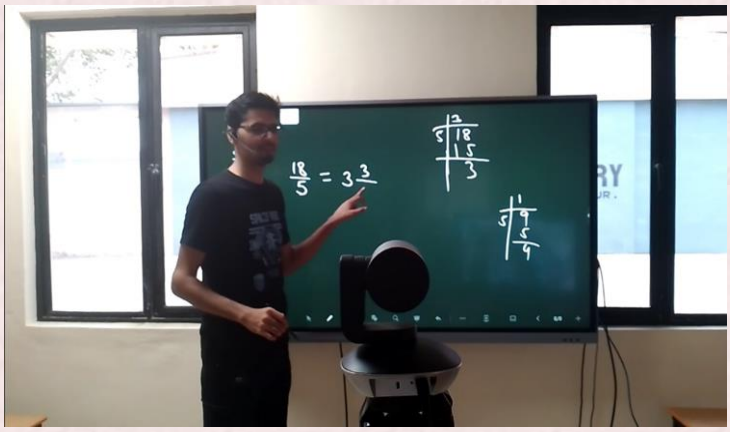
Devices installed at the Smart Classroom in IITK	Devices installed at the Village School Classroom
An Interactive Panel	Wi-fi enabled Multimedia Projector
CFT monitor, mouse, keyboard Camera with tripod Wireless microphone	Self lock viewing screen IP (internet protocol) camera Amplifier with 4 high-quality speakers A high-speed internet broadband connectivity A CPU and a mouse

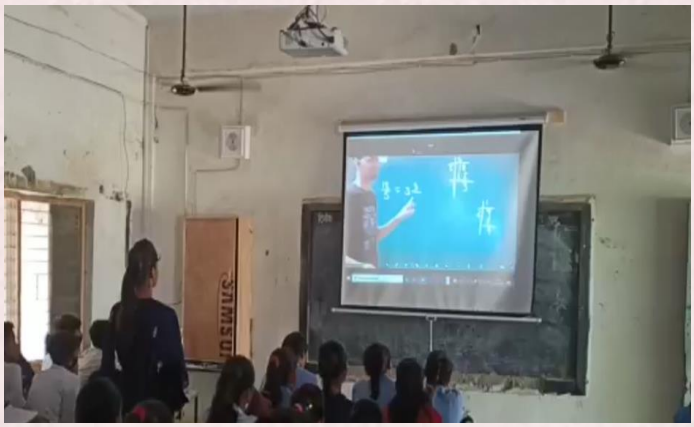
For teaching assistance, a call was made to IIT Kanpur students to volunteer their time. After interviews, 30 student volunteers were shortlisted and have been inducted into the programme as tutors after training.

The Smart classroom at IIT Kanpur connects through the online zoom platform. As the teacher writes on the interactive panel, the camera captures the teacher and the screen and is served to the students via live broadcast. A Class Coordinator is engaged by the school to monitor the class, and grade homework and classwork.

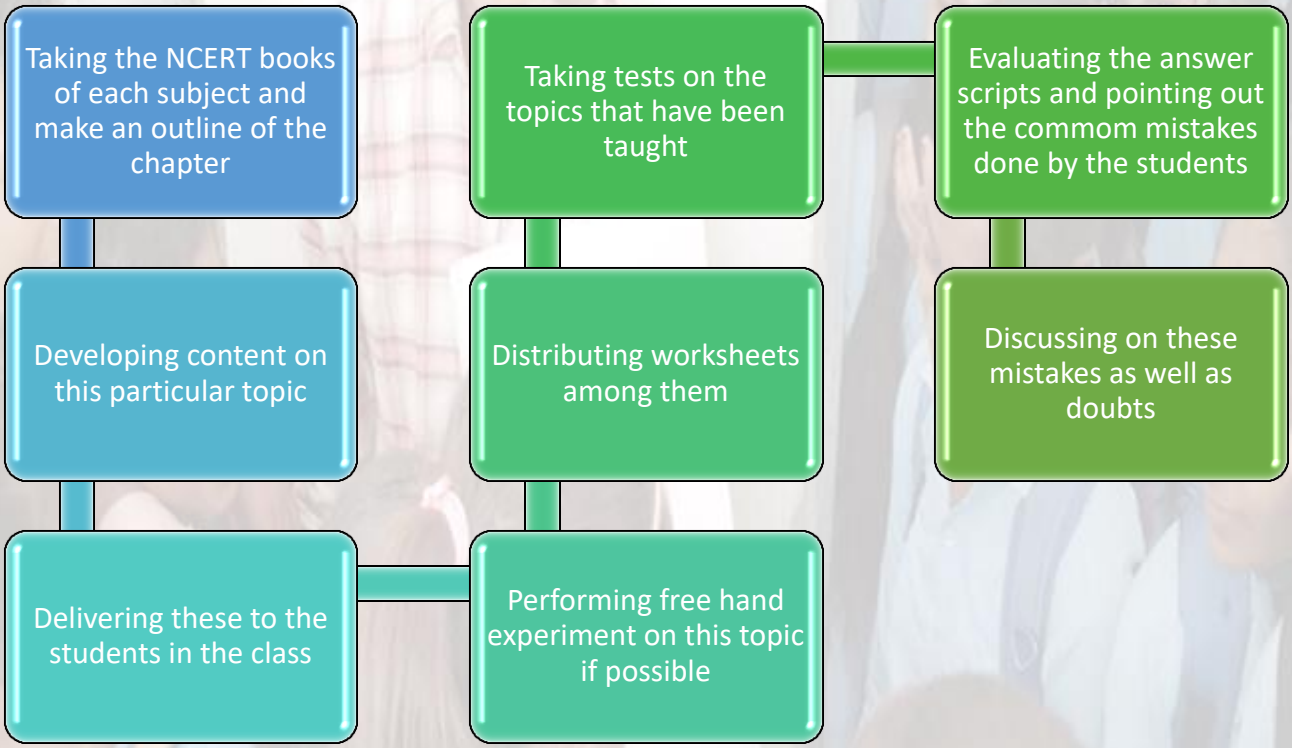
As the teacher writes in the Smart Classroom at IIT Kanpur, he/she is simultaneously projected on the screen at the school. The teacher is visible to the students and the board on which he/she is writing. At the same time, on a separate monitor, the class is made visible to the teacher. During the class, students and teachers are able to interact with each other very comfortably.

In the left hand side photographs (below), it is shown that the teacher in taking class from RSK, IIT Kanpur and in the right hand photographs, the students from Ram Janki Inter College, Bithoor are attending this via zoom meeting.





Process Flowchart



Effectiveness of the project

India's education sector has witnessed a surge in solutions to support the continued learning of students after Covid-19 hits India. To support continuous learning while schools are closed, the Ministry of Education shared various free digital e-learning platforms in the press release (21 March, 2020). The government has made a strong effort to create a repository of learning content and has implemented EdTech interventions in partnership with several NGOs such as Khan Academy, Azim Premji Foundation etc. Access to these educational resources is free of cost. Besides these, the National Council for Education Research and Training (NCERT) has deployed 1,886 audios, 2,000 videos, 696 e-books (e-Pubs) and 504 Flip Books for Grades 1–12 in different languages through a mobile app. National Repository of Open Educational Resources (NROER) also offers 14,527 files including 401 collections, 2,779 documents, 1,345 interactive, 1,664 audios, 2,586 images and 6,153 videos in different languages.

All of these measures which were taken are really commendable. But these facilities demand one to one connectivity. One can take advantage of these resources if the student himself/herself has the accessibility of at least a smartphone with a stable internet support. The Remote Learning Reachability report (2020) by UNICEF stated that only 24% of households have access to the internet across the country. Another report by UNICEF (October 2021) highlighted that the students in Grade 9 and above, only 28% accessed videos or recorded classes and only 16% accessed live online classes.

Advantages of this model

a) Since students assemble at school for the online classes, all students access education whether they can afford individual smart device or not.
b) The system permits smooth online interaction between students and teachers, and gives a realistic experience of offline classroom.
c) Children sit in classroom and are monitored by Class Coordinator; learning is more effective than individuals studying alone.
d) Class can be conducted by teachers connecting from remote locations. This offers great potential of bringing in high grade teachers to rural schools.

e) Project foster opportunities for teaching and learning by integrating learning technology and various educational resources.
f) This is a scalable model. Multiple schools can be connected at the same time and thereby bringing high quality education to many more rural children.
g) The school classrooms can be used, in after school hours to hold meetings of farmer groups and Self Help Groups.

Visit of the school children to attend workshop by Ms Vineeta Agarwal, Resource Person, Ranjit Singh Rozi Shiksha Kendra at IIT Kanpur

Chemistry demonstration being conducted by Ms Sarika,a student volunteer, at Ram Janki Inter College at Bithoor

Future

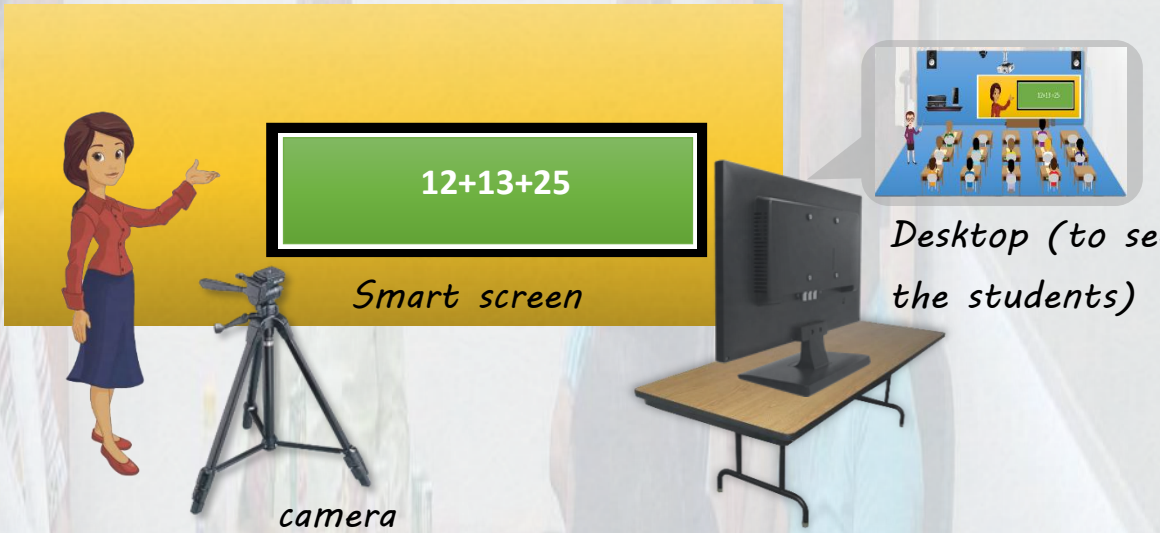
- This being a scalable model, many government schools can get connected to our system.
- This model can enable us to connect to schools located in very remote areas where IIT Kanpur is unable to reach directly.
- Other UBA institutions can also be roped into this model which will further extend the reach of high quality education.

Funds

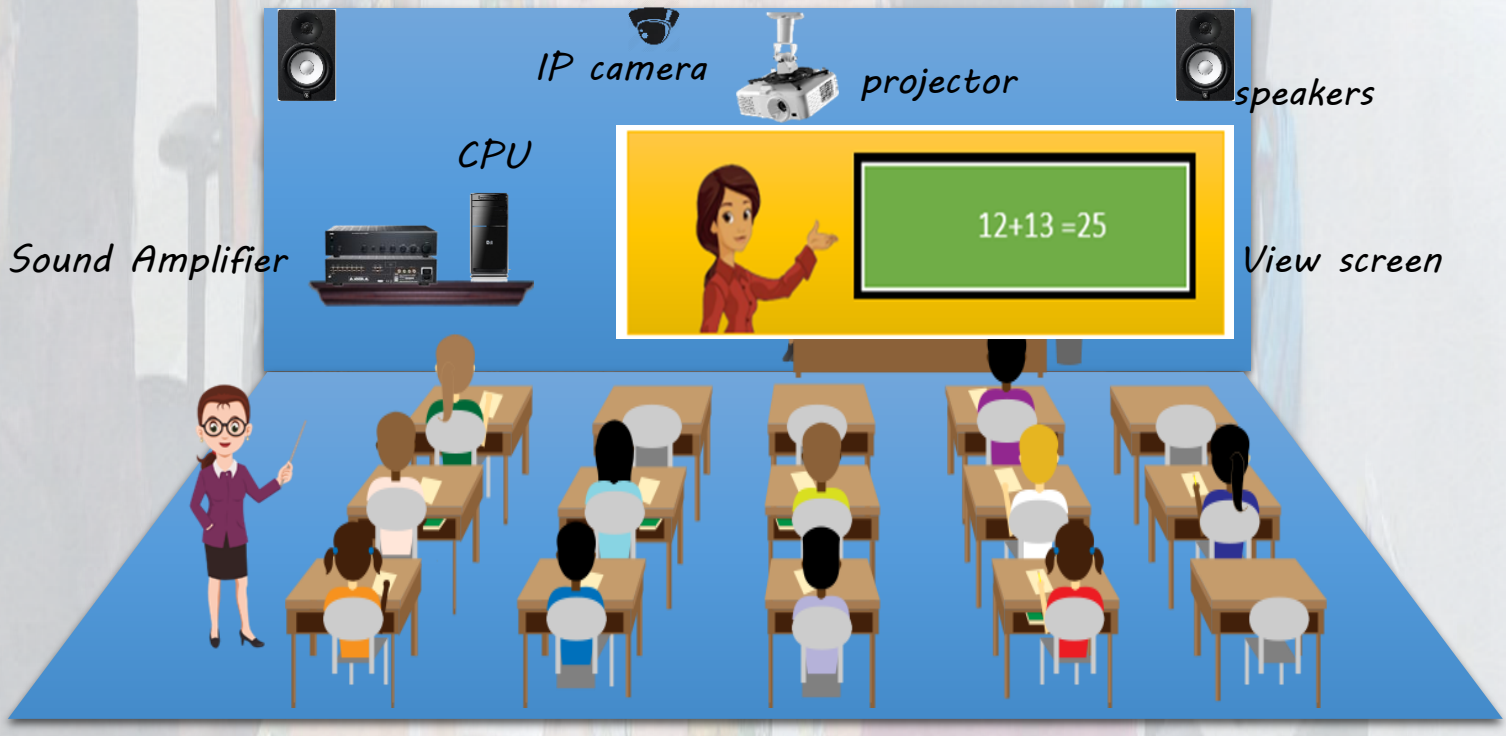
- The fund of Rs. 1,75,000/- from UBA 2.0-Perennial Assistance project and the balance amount was given by Ranjit Singh Rozi Shiksha Kendra to set up the smart class room at IIT Kanpur.
- The expenses for the infrastructure (based on our advice) at the village school class room was borne by the school.

THE EDUCATION PYRAMID

Resource person develops content on each subject.



Teacher at RSK teaches the students according to that content via online mode



Students at school to attend the class and interact with the teacher. The Class-Coordinator minds the class and bridges communication gaps