

## USE OF TECHNOLOGY IN EDUCATION

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Dr. Mihir Solanki holds MA, B.Ed and PhD degrees. He has been a language teacher since September 2011 in Mehsana Primary School No. 3, which is located 1 km from the bus station in the centre of Mehsana city. Given his interest in digital technology, he decided to digitalize the school, which now uses a variety of electronic teaching methods, such as online quizzes, videos, AR, VR, 3D maps, 360-view instruction, virtual classes, and so on to support learning.

His first attempt at digitalization was the first unit in Gujarati language, an introduction to nouns. The next unit was on authors, for which he sourced information from the websites of Gujarati Sahitya Parishad and Gujarat Sahitya Akademi and prepared videos that had poems, songs and animation. These digitalized lessons captured students' interest and improved their engagement with the lessons.

Dr Solanki then used the Internet, videos and blogs to update his knowledge. His next experiment was to create a flash quiz which was well-received by the students. He prepared 51

flash quizzes for different subjects, and shared these on his blog for wider reach. The quizzes were not limited to Gujarati, but included other subjects such as English, social science, science and mathematics.

He created a YouTube channel, "Shikshan dhara", nicknamed "Mihirkumar", that had a variety of educational videos for both students and teachers.

He was selected by the government for its smart class initiative, as a result of which his school received equipment for two smart classes. With additional resources, three digital rooms were also set up. With this infrastructure in place, it was easy to introduce digital technology such as Google Quiz, 3-D map, smart class, 360-degree views, AR-VR box, and AR-VR applications, among others.

The Flash Quiz was available online enabling students to attempt it anywhere and anytime. They could self-assess their performance and also share with their teachers for evaluation. His videos received wide reception even from students belonging to other schools. He went on to create 302 online flash quizzes for various examination topics and scholarships, and added 14 videos for English, 4 for Gujarati, 7 for scholarship exam, 5 for math games, 2 for Science and 32 for General knowledge. Besides, in the prevailing corona pandemic condition, he has prepared 28 quizzes to support self-study at home and another 212 videos for self- assessment by students. In this way so far, he has created 303 online quizzes, more are in the process of being made and posted day after day. Some specialities of these videos are: the order of questions and the order of answers in the online quiz change automatically. Quiz can be added with pictures and a review of the test can be seen at the end. Students can self-assess their performance at the end. Besides, using tools for



Students studying online

reporting and analytics, the students' results can be listed and summarized in an Excel sheet and the data then analysed for review and feedback at the class and individual level.

Along with, Dr Solanki also began use of 3D map and 360 degree view allowing students virtual tours of the places under study, for instance – Burj Khalifa, the Statue of Liberty and the White House. The children could also see 3D maps of Taj Mahal and Girnar. He has also posted a video on how to use 3D maps on the YouTube channel to teach other teachers on using this technology. He also held a free ICT workshop for teachers so that they could maximum its use in education.

AR-VR technology was used to create a trial AR book for Gujarati standard -7 in the second session. When the mobile pointed on the picture of the author in the lesson of the book, his introduction appears on the mobile screen. Similarly, when the mobile is pointed over a poem, its summary appears, coupled with an oral recitation of the poem. This AR-Book can also be used by students at home. The students also have a lot of fun using it. In the district level Innovation Fair, the teachers also appreciated and liked this technology a lot. However, the book had some technical defects and so in not in use at the moment.

With the aim of popularising use of technology in other schools of the district under the Digital Education to Digital India program, the Mehsana district's ICT team conducts a free workshop on holidays. In the ICT workshop so far, about 700 teachers have taken ICT training and are making efforts to implement learnings in the classroom.

Under the guidance of Mehsana District Primary Education Officer Smt Smitaben Patel, Principal Officer of District Education Training Bhavan Mehsana Shri Vinodbhai Adhiyol and deputy District Primary Education Officer, Shri Pulkitbhai Joshi, various "Digital Education, Free ICT Workshops" have been organized in the district.

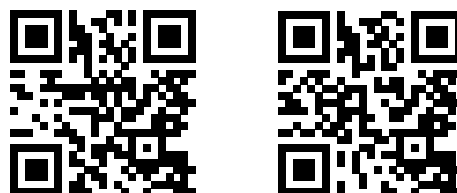
### Online ICTE workshops in Lockdown for Teachers

Lockdowns were enforced across the country during the Corona epidemic. During this difficult time, the online Free ICT Workshop for digital education was launched on March 6, 2020. ICT team of Mehsana and e-education team joined hands for this work. Every day Dr. Solanki hosted a 2-hour session in the evenings for Free ICT workshop which was attended by an average of 70 to 90 teachers from different districts of Gujarat. During this time, he also conducted 20 online workshops benefitting more than 1309 teachers.

The links to his videos on the use of 3D map



The links to his videos of the book and of students using the book



### Virtual Classes for Children

Dr Solanki also began online digital e-classes on Zoom app to educate children and also share tips on the safety measures to adopt during the pandemic. This was in addition to their classroom lessons, given that all schools were closed due to the lockdown. A note of this innovative work was taken by IIM Ahmedabad, I to We Foundation, Doordarshan's D.D News and other newspaper publications. Currently, classes are being conducted using the virtual Microsoft Teams by Gujarat Education Department. During the day time, the parents are not at home as they have to go out for labour work. Taking a note of this problem and non-availability of mobile phones for the children at this time, the virtual classes are conducted during the evening hours from 6 pm to 9 pm.

### Development of mobile applications for children

Dr. Solanki has created three mobile apps so that children can have fun instead of getting bored or wasting their time. Mehsana district was the first to make the innovative use of mobile application.

The first application – "Home is my school" was inspired by District Development Officer Shri



Mobile Application

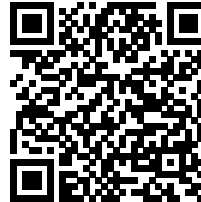
M.Y. Daxini. In this application, students can self-assess themselves while enjoying the educational games. During the period of lockdown, GCRT under the guidance of the state government, Gandhinagar had conducted the program “Study from Home” and “Nest is safe and warm for the family”. Under this program, the students from class 3 to 8 were given study related literature. He uploaded all the necessary resources so that children can access all the study materials at one place. To reinforce the literature subscribed by the education board, under the “Study from Home” program, he also created weekly quiz for every class. The application also includes math-related games for the students. Homework was also created in the app for students of Std. 6 to 8.

Also during the lockdown, Mobile app “Ganan” was found to be of great use to the children allowing them to practice math concepts and self-evaluate their performance. There are 15 questions given at a time in which numbers of the sums keep changing automatically every time the students play the game. This application is useful

### Applications



“Home is the school”



“Ganan”



“Study At Home”

for students to practice their basic mathematical operators at home.

The school has been achieving A grade since the past consecutive 5 years in the “Gunotsav” and also received A grade in the teacher’s grade. Also, 64 students have successfully attempted NMMS and PSE Scholarship Exam.

There is also an increase in the number of admissions from private schools to government schools. In the year 2019-20, 50 students from private schools sought admission in government school.



#### QUESTIONS FOR TEACHERS

1. What are the things to keep in mind before teaching children the subject in a smart class?
2. What should be included in the results of online assessment?
3. How to test content in smart class?

#### QUESTIONS FOR TRAINEES

1. What can be done to make children more focused in a smart class?
2. In Gujarati subject, children should not make mistakes in spelling and words, what should be done for that?
3. What is the difference between a normal classroom and a smart class?