



**Ministry of  
Education**  
Government of India



# Digital Initiatives at National Level in the context of NEP 2020: Lessons for Secondary schools

**Central Institute of Educational Technology(CIET)  
National Council of Educational Research and Training (NCERT)  
(An Autonomous organisation set up by  
Ministry of Education, Government of India)**



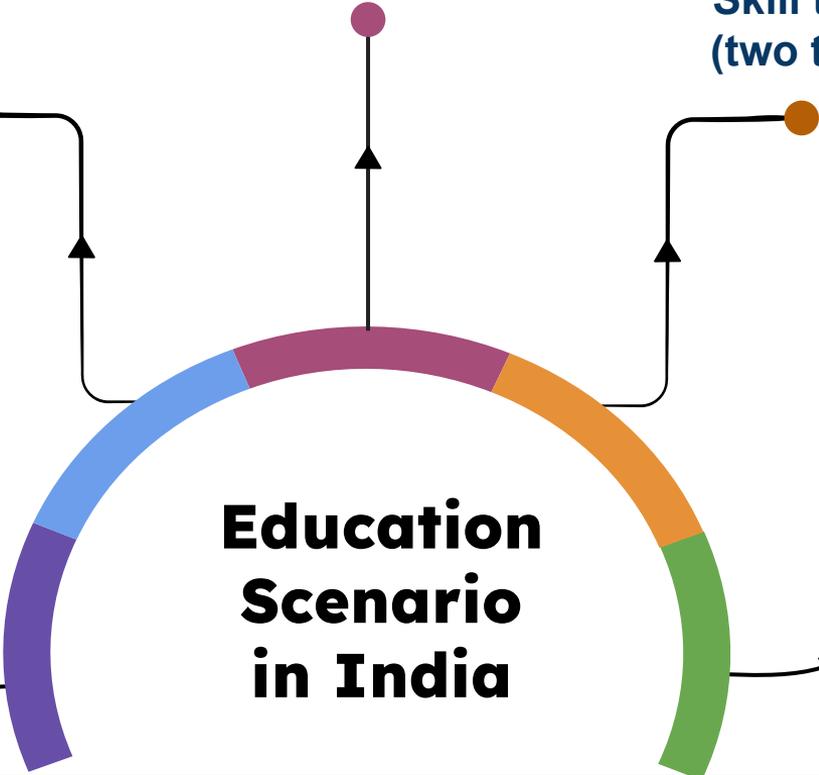
# Imparting equitable quality education and lifelong learning is the goal

CPD of **10 million** Teachers is a challenge

**1.3** bn. People  
**1.5** million Schools  
**900+** universities  
**17000+** TEIs  
**330** million students

Skill training of youth (two third population)

Bridging the Digital Divide is the goal

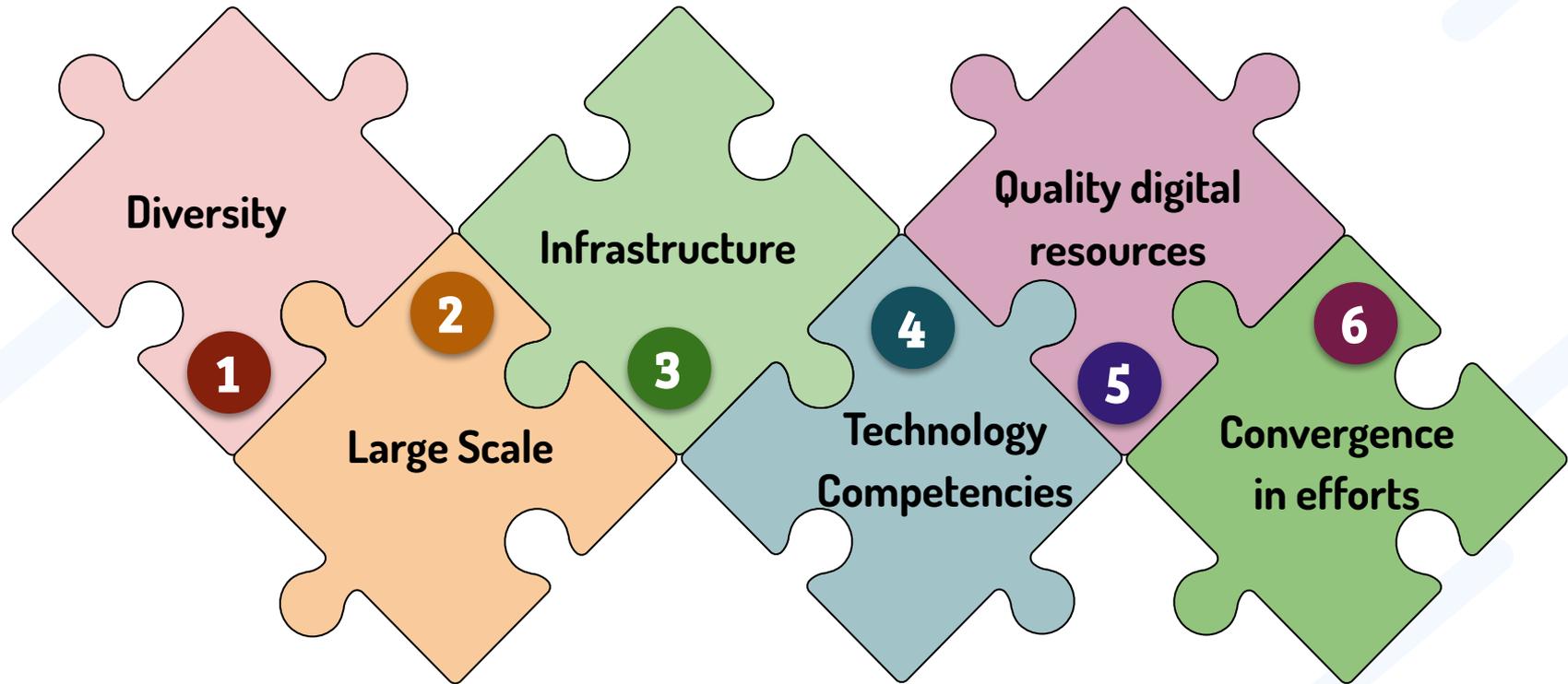


## Education Scenario in India

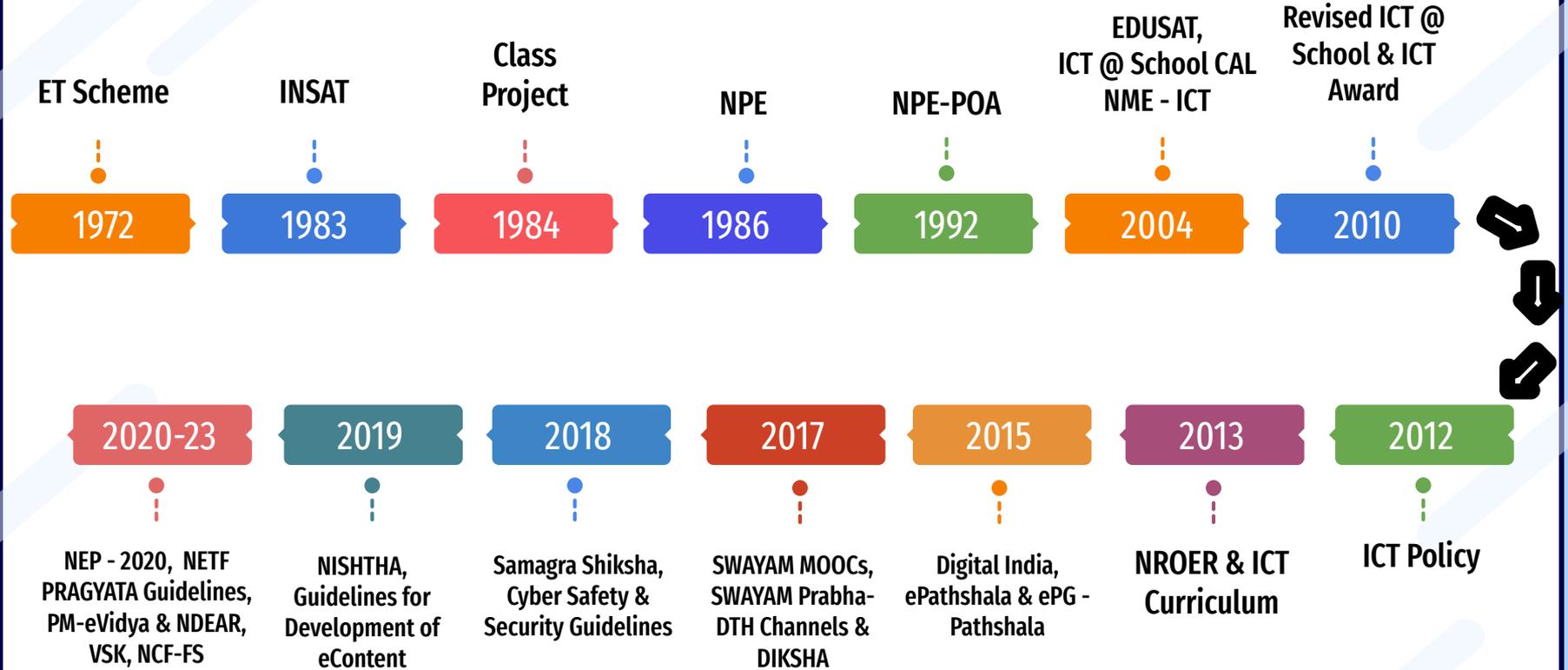


<https://www.mentimeter.com/app/presentation/alq119ygydsx12snkdw59bc415edrwkm/dr95xkrqbuwo/edit>

# Issues & Challenges of Implementing Technology in Education



# ICT Use in India: Policy Directions



# NEP 2020 - Thrust of Technological Interventions

**Teaching-  
learning &  
evaluation  
processes**

**Supporting teacher  
preparation &  
professional  
development**

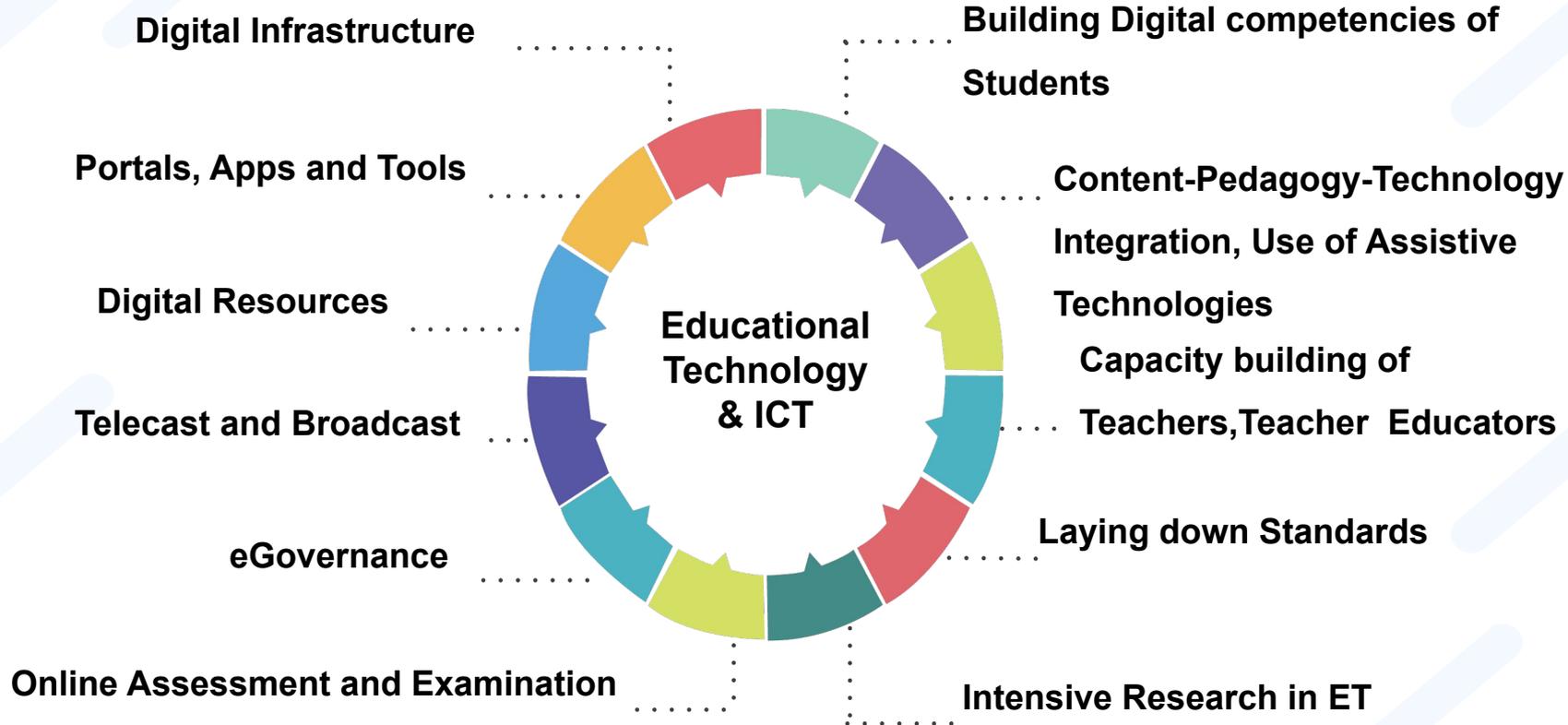
**Enhancing  
educational  
access**

**Streamlining  
educational  
management  
and  
administration**

**Removing  
language  
barriers**

**Access to  
Divyang  
students**

# NEP-2020: Recommendations for Online and Digital Education



# Digital Initiatives

<https://www.menti.com/alyh4yo72n2q>

# Major Digital Initiatives

1

**PMeVIDYA**



2

**DIKSHA**



3

**ePathshala**



4

**NISHTHA**



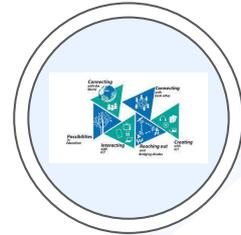
5

**SWAYAM**



6

**ICT Curriculum**



# Vidya Samiksha Kendra (VSK)

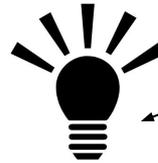
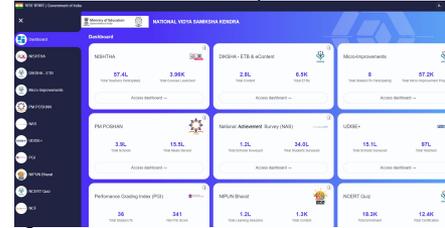
**Vidya Samiksha Kendra : helping us see & monitor policy implementation and drive reforms**



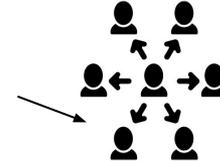
DATA FROM DIKSHA PROVIDES THE ABILITY TO SEE AND EMPOWER RELEVANT STAKEHOLDERS



**Visibility: 'Ability to See' in real time**



**Insights: 'Ability to Make Sense' of data**



**Actionability: 'Ability to Amplify Actions' through coordinated efforts**

# Continuous Professional Development (CPD)



**NISHTHA**

Around 65 lakh+ Teachers,  
Teacher Educators &  
School Heads



**CPD Courses**

6,44,360 Certificates issued



**MOOCs for School  
Education**

4,17,338 enrolled including  
students, teachers, parents  
and civil service aspirants



**Online Capacity  
Building on ET/ ICT**

7Lakh + Certificates issued

*Platforms: MOODLE,  
SUNBIRD, OPEN  
edX, Google Course  
Builder*

# NISHTHA



NISHTHA  
(Elementary Level)



NISHTHA  
(Secondary Level)



NISHTHA  
for NIPUN  
Bharat



NISHTHA  
(ECCE)  
**(Ongoing)**

18 Courses	12 Courses	10 Courses	06 Courses
30 States/ UTs and 7 autonomous organisations under MoE and MoD	33 States/UTs and 8 autonomous organization under MoE, MoD and MoTA	33 States/UTs and 5 autonomous organizations under MoE	29 States/ UTs initiated POs, CDPOs, Supervisors, DIET faculty from DRU for NFE & AE
11 language - Assam, Bengali, Bodo, English, Kannada, Hindi, Telugu, Odia, Gujarati, Punjabi, Urdu	10 language - Hindi, English, Urdu, Gujarati, Punjabi, Telugu, Kannada, Bengali, Marathi and Odia	11 language - Hindi, English, Urdu, Gujarati, Punjabi, Telugu, Kannada, Odia ,Bengali, Marathi and Mizo	2 languages - Hindi , English

42 Lakh

7.2 Lakh

12.9 Lakh

Target -34,000

200+ Virtual Labs

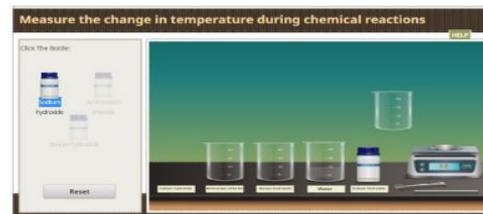
## Glimpses of AR, VR labs and Experiential learning center



### Virtual labs

Developed in collaboration with CDAC (Mumbai) and AMRITA Vidyapeetham  
Available on DIKSHA portal/app

Link for Virtual Labs vertical- <https://diksha.gov.in/virtuallabs.html>



## Glimpses of AR, VR labs and Experiential learning center



# Phygital

Bridging of physical and digital worlds by 'energizing' textbooks...



State board, Grade 5th Textbook

ಅಥ್ಯಾಯ - 1  
ಗುಣಕಾರ



ನಿಮ್ಮ ಈ ಅಥ್ಯಾಯದ ಅಧ್ಯಯನದ ನಂತರ ಕೆಳಕಂಡ ಸಾಮರ್ಥ್ಯಗಳನ್ನು ಗಳಿಸುವುದು :

- 3-ಅಂಕಿಯ ಎರಡು ಸಂಖ್ಯೆಗಳ ಗುಣಲಬ್ಧವನ್ನು ಕಂಡುಹಿಡಿಯುವುದು.
- 4-ಅಂಕಿಯ ಸಂಖ್ಯೆಯನ್ನು 1 ಅಥವಾ 2 ಅಂಕಿಯ ಸಂಖ್ಯೆಯಿಂದ ಗುಣಿಸುವುದು.
- 5-ಅಂಕಿಯ ಸಂಖ್ಯೆಯನ್ನು 1 ಅಂಕಿಯ ಸಂಖ್ಯೆಯಿಂದ ಗುಣಿಸುವುದು.
- ಗುಣಕಾರ ಕ್ರಮವನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವುದು.

ಗುಣಕಾರವು ಗುಣಕರ ಮೂಲಕ ಕೆಳಕಂಡ ಒಂದು ಎಂಬ ಸಮಗ 3-ಅಂಕಿಯ ಗುಣಕಾರವು ಪ್ರಾರಂಭವಾಗುತ್ತದೆ. ಎರಡು ಸಂಖ್ಯೆಗಳನ್ನು ಒಂದೇ ಜಾರಿಗೆ ಗುಣಕರ ಮಾಡುವುದು. ಗುಣಕರವು ಸಂಖ್ಯೆಯನ್ನು 'ಗುಣಕ' ಎಂದು ಮತ್ತು ಗುಣಕರ ಸಂಖ್ಯೆಯನ್ನು 'ಗುಣಕ' ಎಂದು ಕರೆಯುತ್ತದೆ. ಈ ಮೂಲಕ ಸಂಖ್ಯೆಗಳ ಗುಣಕಾರದಿಂದ 'ಫಲಿತ' ಸಂಖ್ಯೆಯನ್ನು 'ಗುಣಲಬ್ಧ' ಎಂದು ಕರೆಯುತ್ತಾರೆ.

$123 \times 4 = 492$

ಗುಣಕಾರದ ಗುಣಲಬ್ಧಗಳು

- 1) ಯಾವುದಾದರೂ ಒಂದು ಸಂಖ್ಯೆ ಮತ್ತು ಮತ್ತೊಂದು ಗುಣಲಬ್ಧ ಯಾವಾಗಲೂ ಮೊತ್ತವಾಗುತ್ತದೆ. ಉದಾ:  $12 \times 0 = 0$ ,  $8 \times 0 = 0$
- 2) 1 ಮತ್ತು ಯಾವುದಾದರೂ ಒಂದು ಸಂಖ್ಯೆಯ ಗುಣಲಬ್ಧ ಯಾವಾಗಲೂ ಆದೇ ಸಂಖ್ಯೆಯಾಗುತ್ತದೆ. ಉದಾ:  $9 \times 1 = 9$ ,  $6 \times 1 = 6$
- 3) ಗುಣಕ ಮತ್ತು ಗುಣಕರ ಸ್ಥಾನವನ್ನು ಬದಲಾಯಿಸಿದಾಗಲೂ ಅಭಿಗಮ ಗುಣಲಬ್ಧ ಒಂದೇಯಾಗಿರುತ್ತದೆ. ಉದಾ:  $4 \times 7 = 28$ ,  $7 \times 4 = 28$ .

ಪ್ರಸಾರಣದ ಅಥ್ಯಾಯ

- 1) ಗುಣಲಬ್ಧವನ್ನು ಕಂಡುಹಿಡಿಯುವುದು.
 

1) $35 \times 0$	4) $1 \times 235$
2) $164 \times 1$	5) $0 \times 1,001$
3) $100 \times 0$	6) $1 \times 55$

...which lead to ease of access to relevant digital content across the nation and enable continuity of learning

NCERT, Grade 8th textbook

**Land, Soil, Water, Natural Vegetation and Wildlife Resources**



*In a small village in Tanzania, Africa, Mamba gets up very early in the morning to fetch water. She has to walk a long way and returns after a few hours. She then helps her mother in the house and joins her brothers in taking care of their goats. All her family owns a piece of rocky land around their small hut. Mamba's father can barely grow some maize and beans on it after tilling hard. This is not enough to feed their family for the whole year.*

*Peter lives in the heart of the sheep rearing region in New Zealand where his family runs a wool processing factory. Everyday when he returns from school, Peter watches his uncle taking care of their sheep. Their sheep yard is situated on a wide grassy plain with hills in the far distance. It is managed in a scientific way using the latest technology. Peter's family also grows vegetables through organic farming.*

*Mamba and Peter stay in two different parts of the world and lead very different lives. This difference is because of the differences in the quality of land, soil, water, natural vegetation, animals and the usage of technology. The availability of such resources is the main reason places differ from each other.*

**LAND**

Land is among the most important natural resources. It covers only about thirty per cent of the total area of the earth's surface and all parts of this small percentage are not habitable.

The uneven distribution of population in different parts of the world is mainly due to varied characteristics

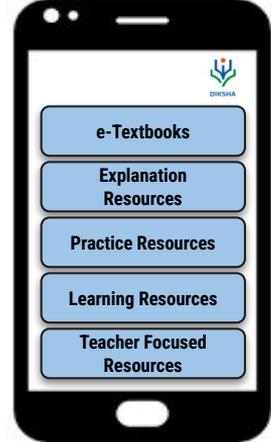
**Let's do**

Observe the land, type of soil and water availability in the region you live. Discuss in your class, how it has influenced the lifestyle of people there.

**Do you know?**

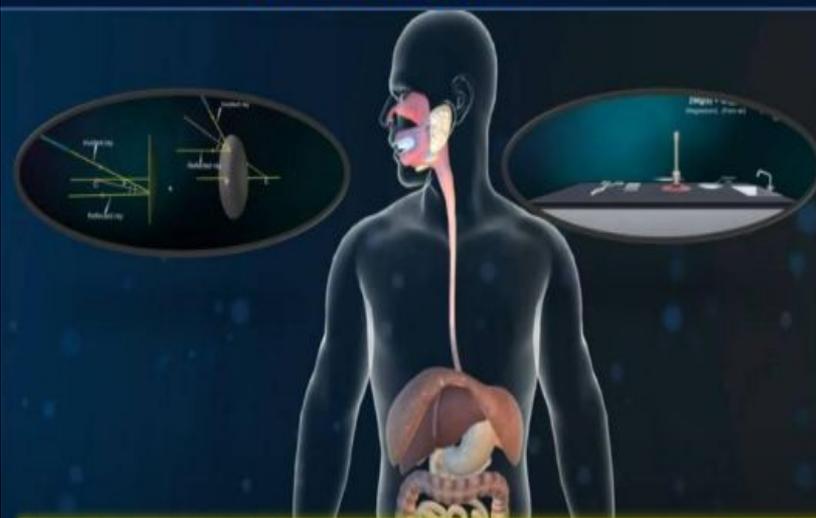
Ninety per cent of the world population occupies only thirty per cent of land area. The remaining seventy per cent of the land is either sparsely populated or uninhabited.

QR Code linking to relevant e-content (student and teacher facing content)



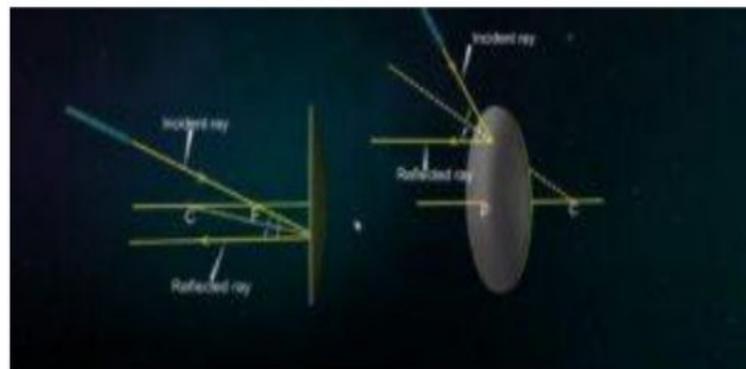
# Augmented Reality (AR)

## Augmented Reality (AR) 3D simulation for Science Education



The very first step involves chewing. The salivary glands, along with the tongue, helps to moisten and lubricate food, before being pushed down into the food pipe. Salivary glands: The saliva contains an enzyme called salivary amylase that breaks down starch which is a complex molecule to give simple sugar. The food is mixed thoroughly with saliva and moved around the mouth while chewing by the muscular tongue.

Play (A)



## Glimpses of AR, VR labs and Experiential learning center



**Experiential Learning Centre**  
**Developed in collaboration with Jubilant Bhartia and Ganpat University**



- **Repository of Open Educational Resources**
- **Collaborative Platform**
- **Curriculum-aligned content**
- **Analytics**
- **Multilingual support**
- **Offline access**

## Dedicated Verticals for



**Foundational Literacy and Numeracy (FLN)**



**Adult Education**



**Virtual Lab**



**Children with special needs (CWSN)**



**Vocational Education**

**Jaadui Pitara**



**6,697+ ETBs by States / UTs**



**3,41,666+ eContent**



**13,563 + eCourses**



**13.5 million page hits on daily basis**



**Supports 38 languages  
Including 22 scheduled  
languages and indian sign  
languages (ISL).**

# DIKSHA

## DIKSHA's building blocks were used for multiple use cases



**Energised  
Textbooks**



**Teacher  
Professional  
Development**



**Question  
Bank**



**Digital  
Credentials**



**Collaboration**



**Phygital**



**Content  
Sourcing**



**Content  
Authoring**



**Quizzes**



**Vidya Samiksha Kendra - CCC**  
System to monitor, mentor,  
manage the whole ecosystem



**cQube**



**Surveys**



**Language  
Translations**



**Content  
Consumption**



**Data Tools &  
Dashboards**



**Chatbot**



**Mentoring**



**Sunbird Registry and  
Credentials**

# CIET - NCERT develops...

variety of digital contents



Energized books



Assessment questions



Infographics



eCourses

Guidelines/ Handbooks



Videos, UDL videos



Interactive &  
Immersive content



Audios, Talking  
Books, Audio Books



Worksheets

# eContents ....



eContent in curricular and generic areas various Indian Languages



Age appropriate content for various stakeholders - Students, Teachers, Teacher Educators, Parents etc



Universal Design of Learning (UDL) based content



Collaboration and Partnership

# Game Based Learning

## Place Value(Ones, Tens and Hundreds)

Drag and drop the note(s) and/or coin(s) you need to buy this object.

Drop cash here



Rs. 15



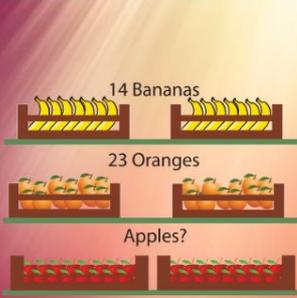
Check

3 / 7

Reuse Embed H:P

## Addition and Subtraction

A fruit seller has 69 fruits. Out of which 23 are oranges, 14 are bananas and some apples. How many apples does the fruit seller have?



14 Bananas

23 Oranges

Apples?

33

32

30

Check

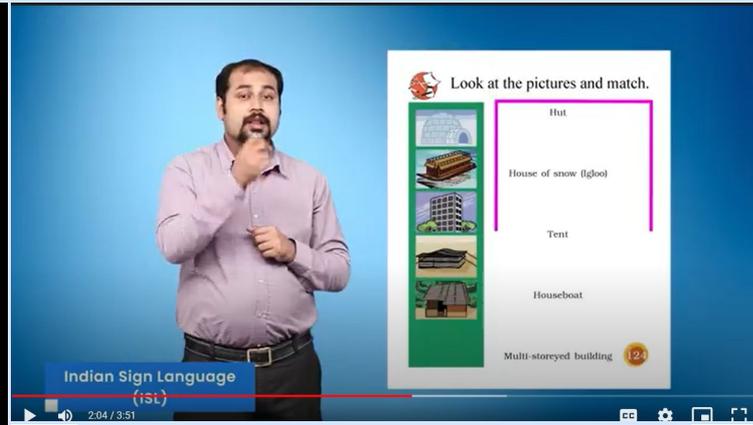
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Reuse Embed H:P

# eContents based on UDL



स्पर्शी, DAISY और ध्वनि रूप से

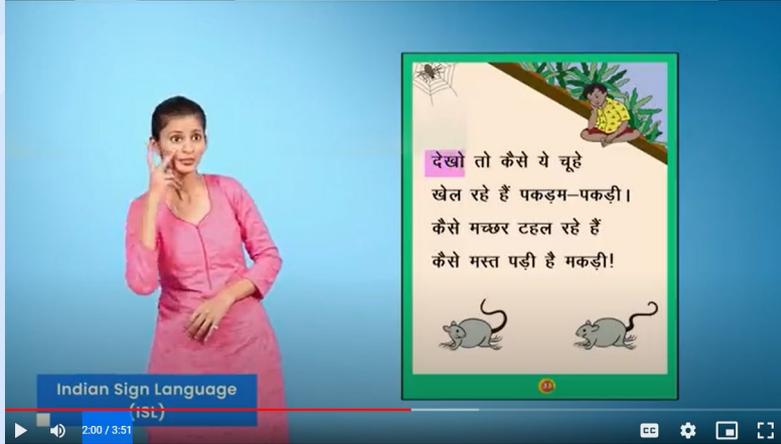


Look at the pictures and match.

	Hut
	House of snow (Igloo)
	Tent
	Houseboat
	Multi-storied building

Indian Sign Language (ISL)

2:04 / 3:51



देखो तो कैसे ये चूहे खेल रहे हैं पकड़म-पकड़ी।  
कैसे मक्खर टहल रहे हैं कैसे मस्त पड़ी है मकड़ी!

Indian Sign Language (ISL)

2:00 / 3:51



स्पर्शी, DAISY और ध्वनि रूप से



# 20,18,62,568 visitors on Portal

# 30 M users in UMANG

App Rating

- 4.3 on Google play store
- 3.5 on Apple Store

App downloads/Users

- 55,47,565 on Google
- 21,61,272 on Apple

# Total Books as ePub: 2,344

# Total no of Flipbook: 2,757



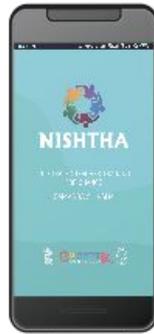
# Dissemination through Educational Apps



DIKSHA



ePathshala



NISHTHA



PMeVidya - AR



NAS



ePathshala  
Scanner



SSP Mauritius



NCF

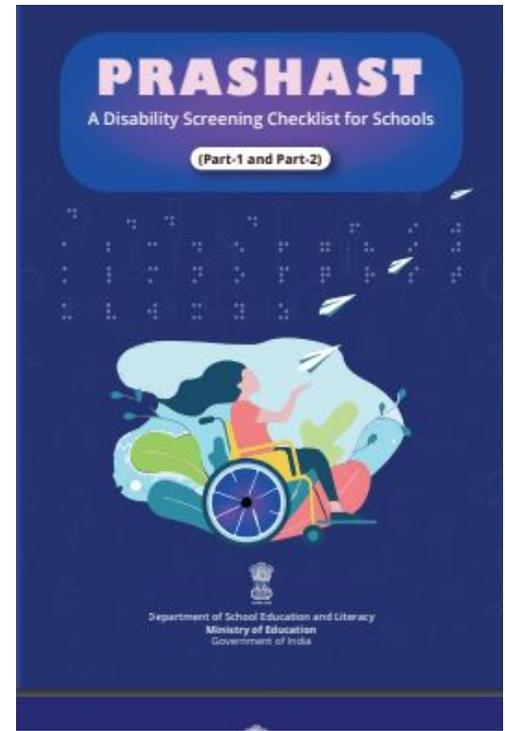


DISaNC



PRASHAST

# PRASHAST



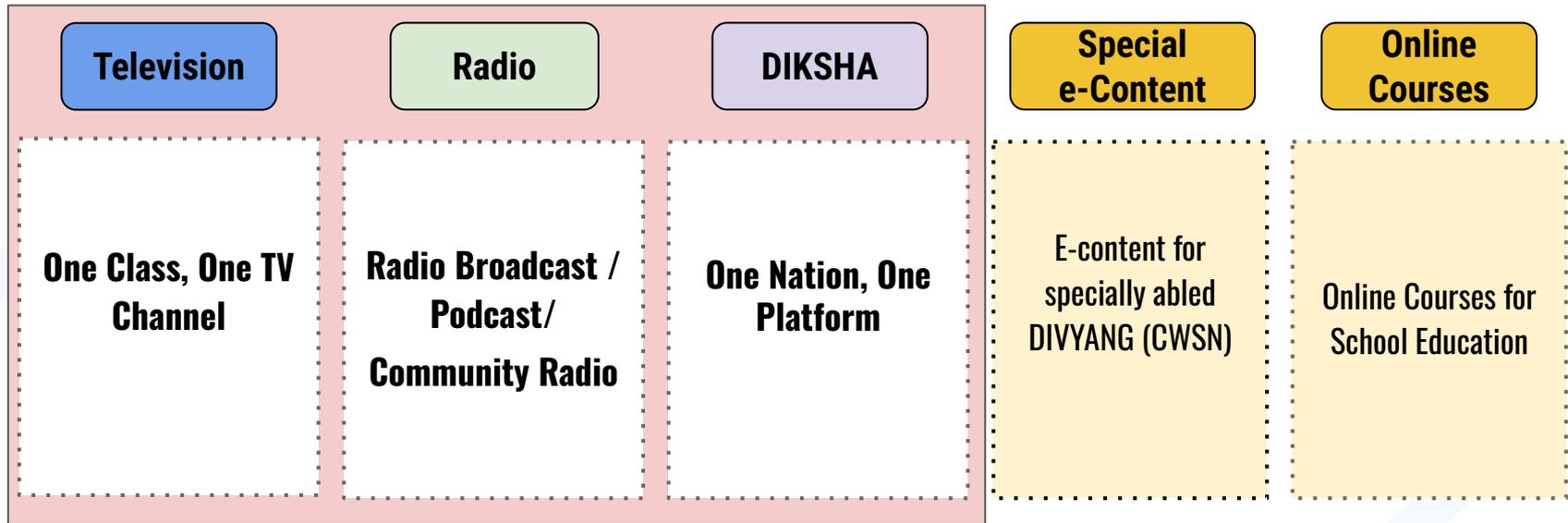
[https://play.google.com/store/apps/details?id=com.dscs.app&hl=en\\_IN&gl=US&pli=1](https://play.google.com/store/apps/details?id=com.dscs.app&hl=en_IN&gl=US&pli=1)

[https://ncert.nic.in/pdf/DSCS\\_booklet.pdf](https://ncert.nic.in/pdf/DSCS_booklet.pdf)

# PM e-VIDYA

PM e-VIDYA focuses on unification of efforts, enabling multi-mode access to education

*PM e-Vidya focuses on developing multi channel learning continuum*



*DIKSHA, Television and Radio are the focus of discussion for resilient and coherent access*

# NCERT has leveraged DIKSHA to enable Coherent Access

The illustration is divided into several sections:

- TV Screen:** Shows a physics teacher, Sher Singh, PGT, Physics, presenting a lesson. A QR code is visible on the screen.
- Smartphone:** Displays the DIKSHA app interface for 'Physics Part 1, Physics • Class 11'. The menu items are: e-Textbooks, Explanation Resources, - TV session (highlighted with a red box), Practice Resources, Learning Resources, and Teacher Focused Resources.
- QR Code:** A square QR code labeled '0962CH08' is positioned to the left of the smartphone.
- PC Monitor:** Shows a desktop view of the DIKSHA website for 'Physics Part 1, Physics • Class 11'. The 'TV session' option is also highlighted with a red box. The monitor ID '0962CH08' is visible on the screen.
- Cartoon Characters:** Two characters are shown at the bottom left. The first character says, 'I have missed the first half of this session, what should I do?'. The second character replies, 'Don't worry! Just scan the QR code on screen using DIKSHA app on your phone'.

**Easy access of content for Chapter wise across grades and subjects through DIKSHA, TV, Radio**

# Present status of PM eVIDYA 12 DTH TV Channels



## 6,822 video programmes

Both in English and Hindi medium for classes 1-12

## 4,247 ISL Programmes

ISL video lessons telecast



## 6,415 Live Show

Covering 3435.5 hours based on AAC

## 13,667 Content Reviewed

NCERT, NIOS, NVS, RILM, States/UTs



3,994 pieces of curriculum-based radio programmes broadcasted on 398 Radio Stations & 2,557 live sessions on iRadio and JioSaavn Mobile apps

# Television



12 DTH TV Channels on 24×7 basis daily and simulcast on Jio TV App, Private cable operators, YouTube channel etc.



11069 curriculum based videos developed for school education in English, Hindi including Indian Sign Languages (ISL) including vocational education



One hour live session for each class for clarification of doubts



IVRS support for addressing queries of students

# Radio



4,300 pieces of curriculum-based radio programmes (Classes 1 -12)

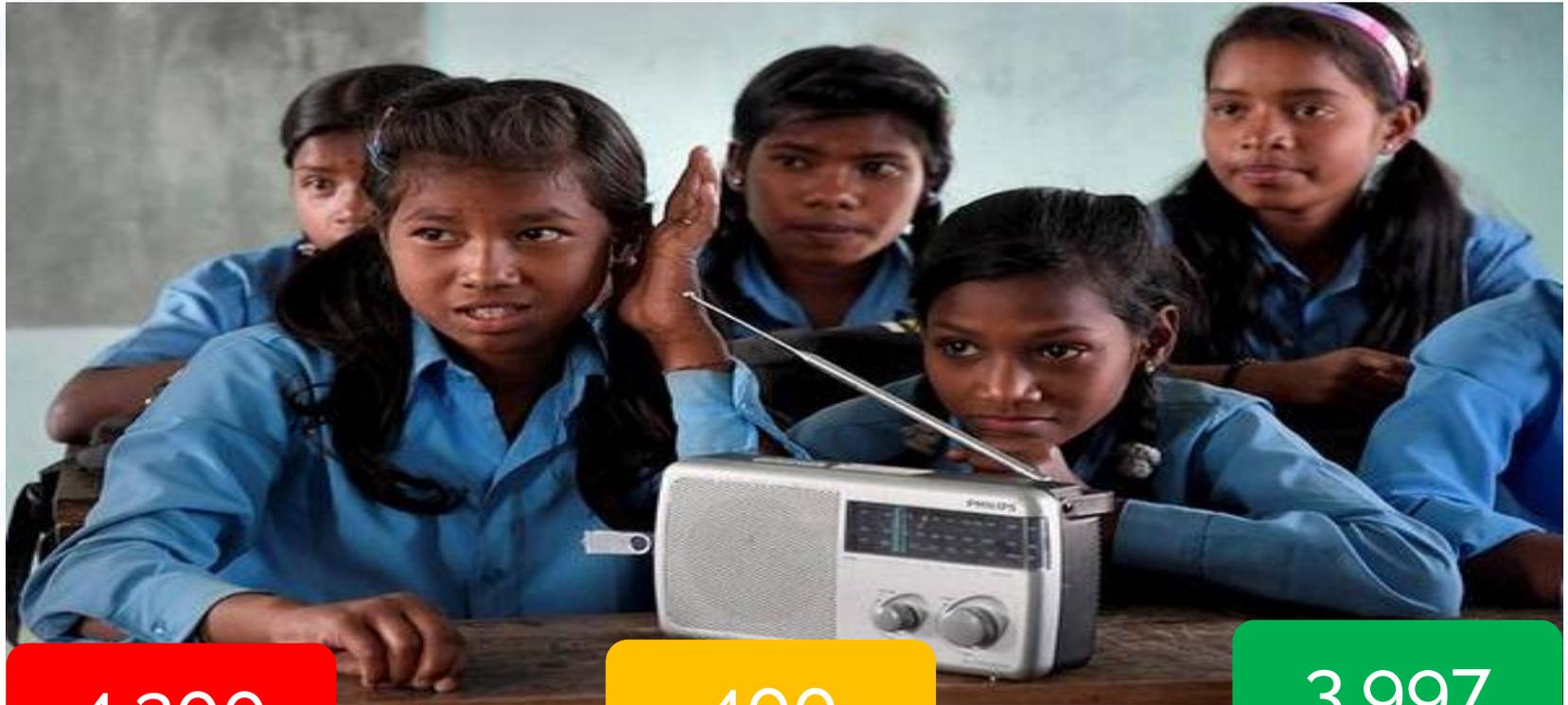
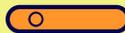


Broadcast on 400 Radio Stations (11 GyanVani FM Radio Stations, 257 Community Radio Stations, 132 All India Radio stations), iRadio and JioSaavn Mobile apps



3,997 live programs podcast on iRadio

# Radio



4,300

Curriculum based radio program(Class 1-12)

400

Radio Stations

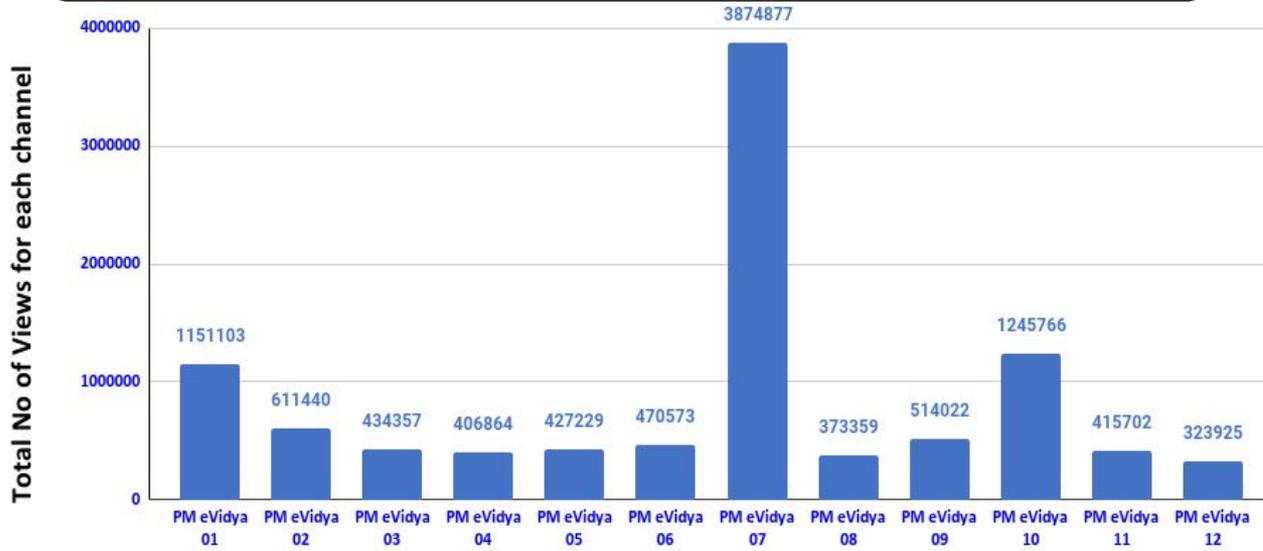
3,997

LIVE radio podcasts

# Viewership details

## PM eVIDYA Channel

Total No. of Views for PM eVidya Channels on JIO TV Mobile App (Sep 2020 - Nov 2022)



Total No of Views for each channel

V

# Feedback Mechanism



IVRS, Email & WhatsApp Group



Radio Broadcast



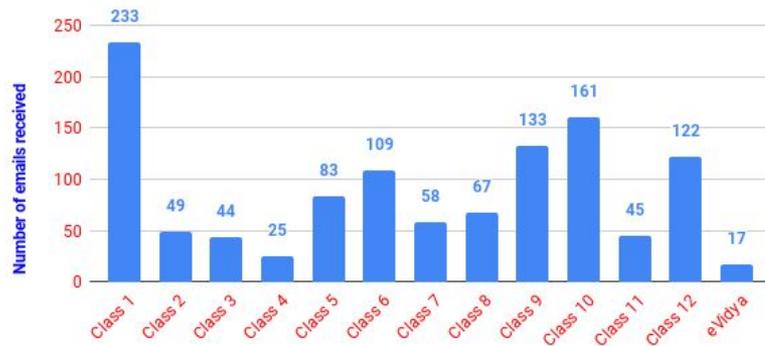
TV Telecast

- Email: **1,259** Emails received
- PM eVIDYA IVRS no. (8800440559)- **59,754** calls received
- Manodarpan IVRS no. (8448440632)- **28,159** calls received

Month-wise PM eVidya IVRS Calls Status

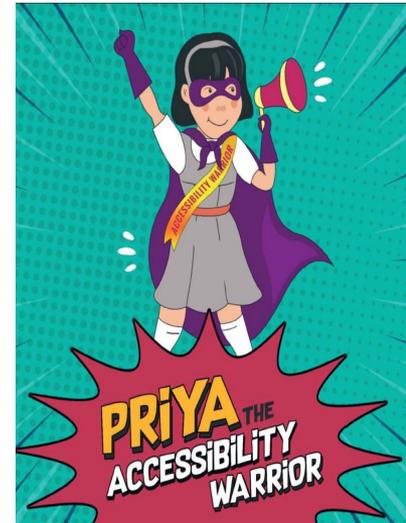
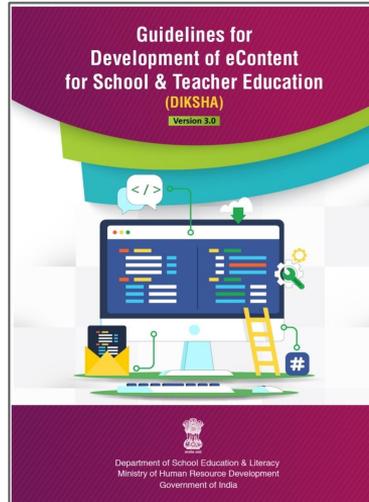
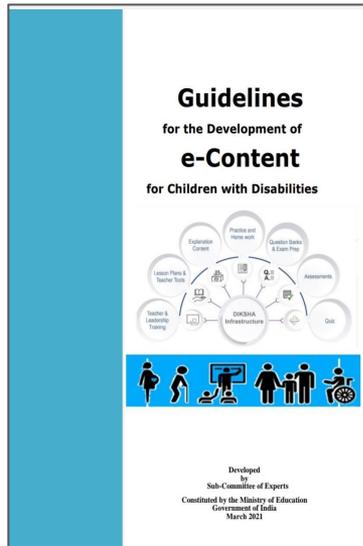
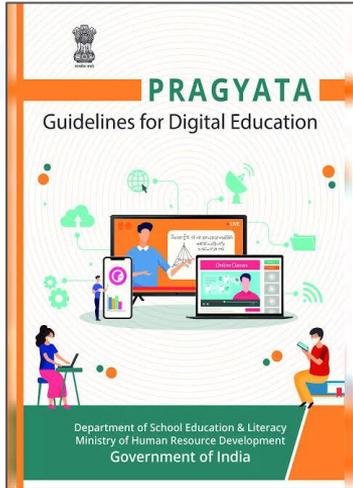


Feedback received through emails for PM eVIDYA 12 DTH TV Channels



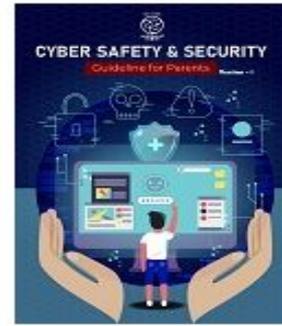
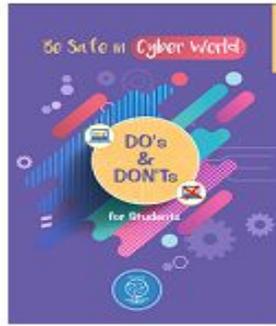
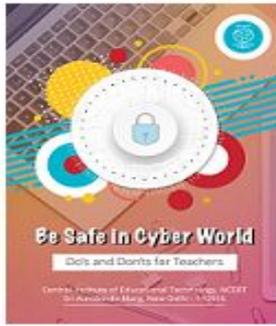
Mail Feedback Summary of PM eVIDYA Channels

# Standards & Guidelines for Digital Education

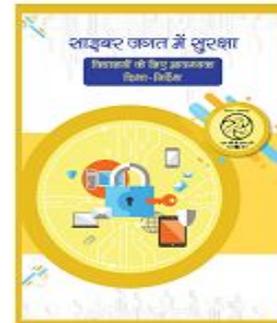
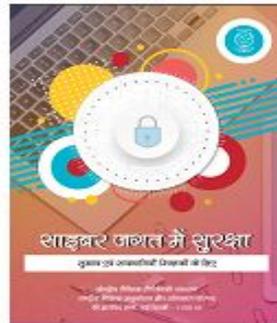
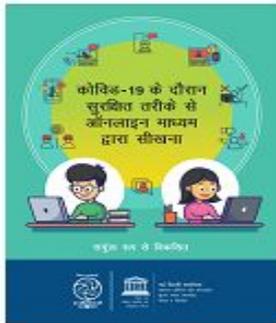


# Cyber Safety Guidelines

## English



## Hindi



# International Collaboration



**Trained master trainers of Mauritius on developing and disseminating OER, Developed a portal and mobile app**



**School Online Programme - Collaboration between Indian and Israel Schools**



**Trained master trainers of Nepal on developing and disseminating eContents and OER**



**School Online Programme - Collaboration between Indian and Korean Schools**



**Shared eContents developed by NCERT**

# Appreciations



<https://create.kahoot.it/share/digital-initiatives-at-national-level-in-the-context-of-nep-2020-lessons-for-secondary-schools/f719b85c-e076-4a89-886c-03fdde936538>

