

Virtual Labs: Need, Perspective, and Scope



Date and Time

16 December, 2024

from 10:00 AM to 11:00 AM, Monday

Resource Persons



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Watch it Live on NCERT Official YouTube Channel
<https://www.youtube.com/@NCERTOFFICIAL>

You can
watch at:



DD Free Dish Channel
Dish TV Channel #2027-2033



PM eVidya Channel #6-12



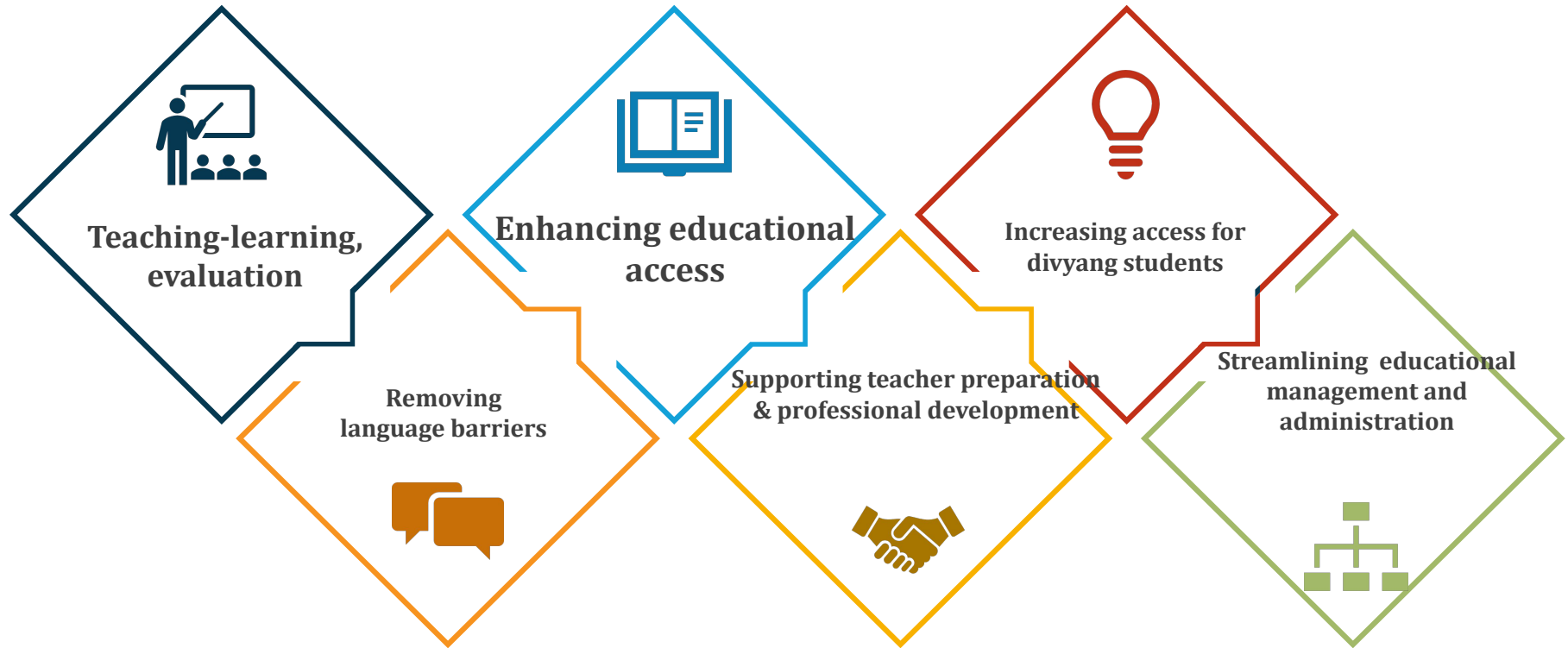
For any further queries, mail to : diksha.training@ciet.nic.in or Call : 8800440559

Virtual Labs: Policy Perspective, Need and Scope

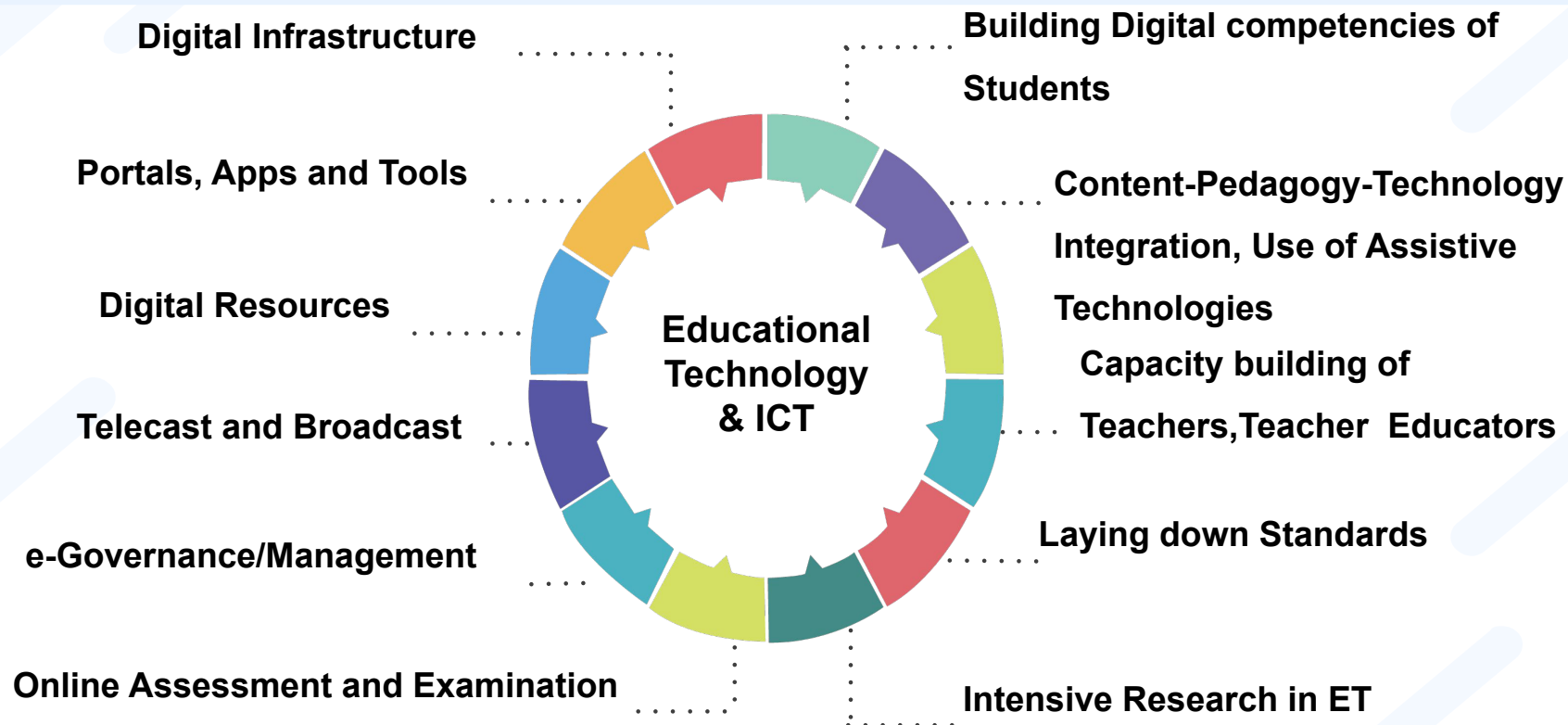


Central Institute of Educational Technology
NCERT, New Delhi

NEP 2020 –Technological thrust areas

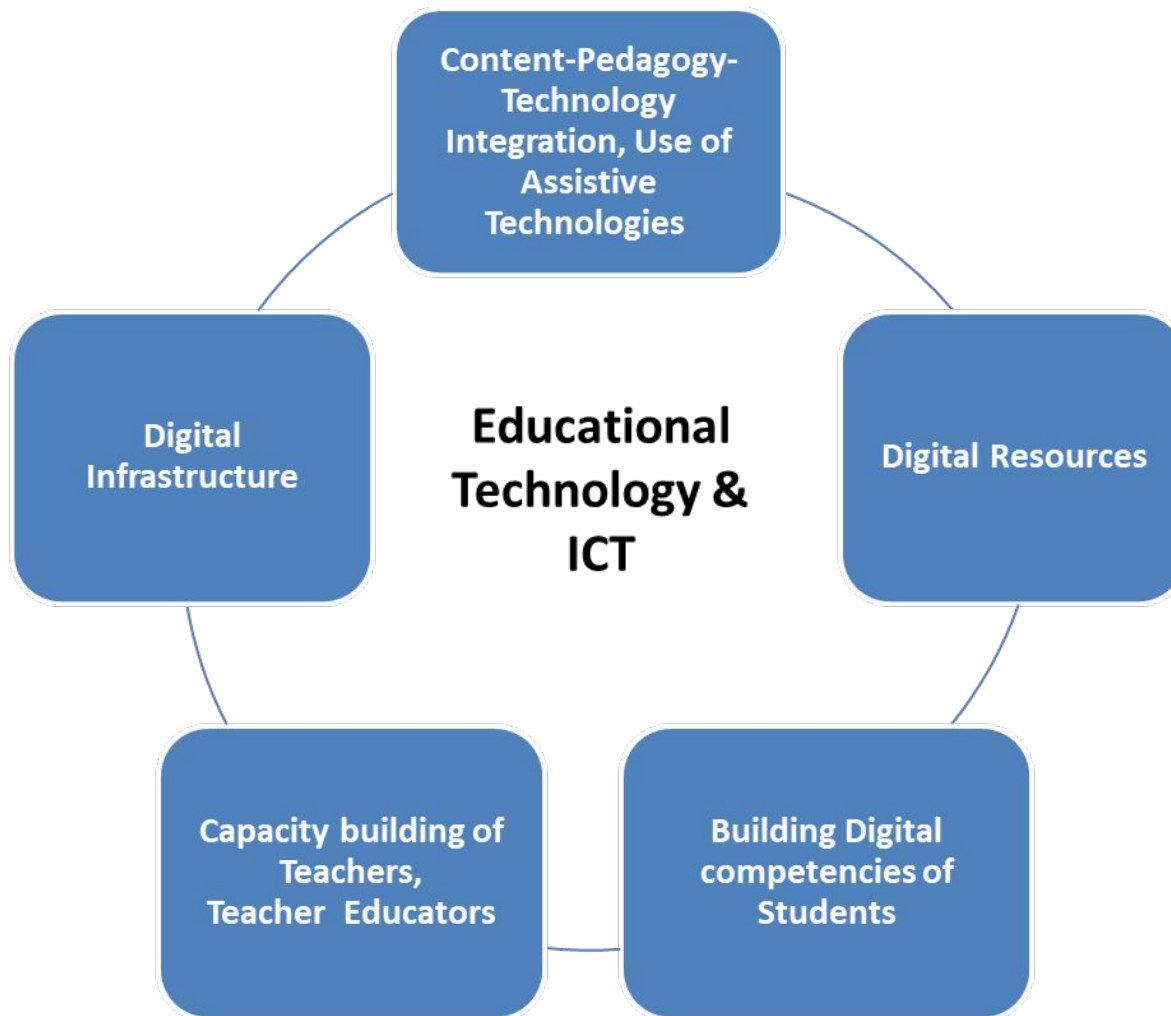


NEP-2020: Recommendations for Online and Digital Education



Policy Perspective (NEP 2020 vision)

- Technology use and Integration
- Ensuring Equitable use of technology
- Extensive Use of technology in teaching and learning
- Content Creation, digital repository and Dissemination
- Blended mode of learning
- Addressing digital divide



Policy Perspective (NEP 2020 Vision) and Virtual Labs



Recommendation of NEP 2020



New National Education Policy 2020 (NEP 2020)



- Access to quality practical and hands-on experiment-based learning experiences to each student
- Virtual labs enhance actual laboratory experience
- Lab based e-resources help students in visualizing the concepts

Advantages of Virtual labs



- Available on internet for free
- Accessed anytime and anywhere
- Can be accessed even in the absence of physical labs

Virtual labs help learners in following ways

- perform experiments multiple times without consuming chemicals
- revise theoretical concepts
- obtain result of time consuming experiments
- analysis of results thereby improving logical thinking skill



Pedagogical integration of Virtual labs

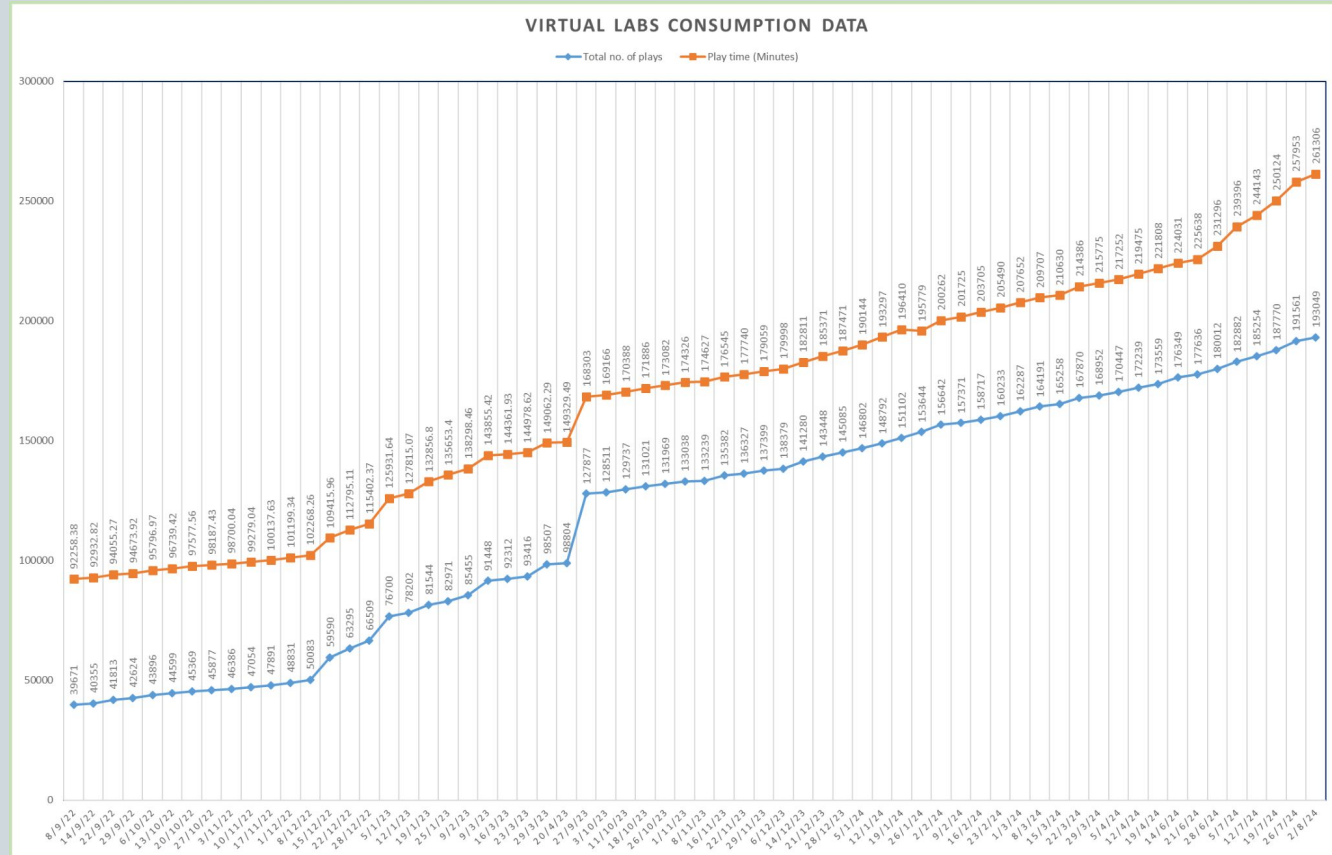
Virtual labs can help **teachers** in following ways:

- Design lesson plan integrating Virtual labs
- Use Virtual labs to demonstrate experimental skills and help learners in developing such skills

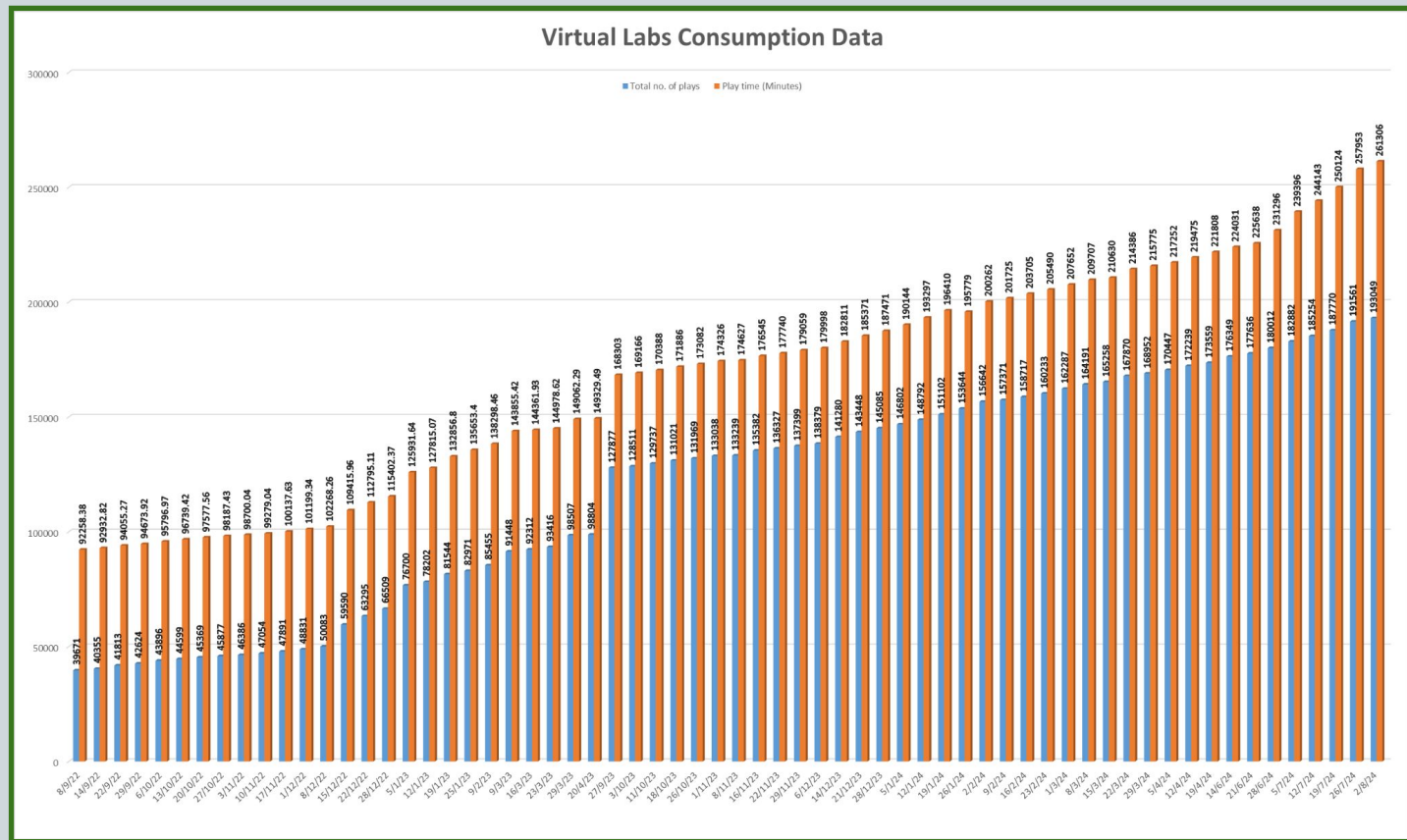


Virtual Labs was launched on 29th July, 2022

Following data shows that large no. of users are taking benefit of available resources



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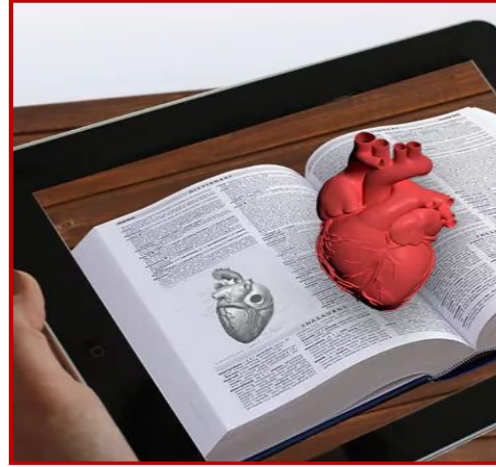




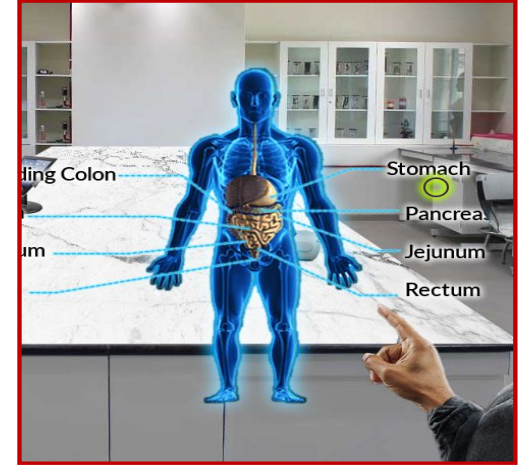
The Spectrum of Reality-Virtuality Continuum



Reality



Augmented Reality



Virtual Reality



Augmented Reality

- Augmented reality (AR) refers to the real-time integration of digital information into a user's environment.
- AR technology overlays content onto the real world, enriching a user's perception of reality rather than replacing it.

Virtual Reality

- Virtual Reality (VR) is a simulated experience created by computer technology that immerses users in an interactive, three-dimensional environment.
- It allows users to experience and interact with a virtual world as if they were physically present.

Pedagogical Benefits of Extended Reality

Increased Engagement-

Immersive experiences make learning more exciting and interactive, boosting student motivation and interest.

Improved Retention-

Hands-on experiences in virtual environments lead to deeper understanding and improved knowledge retention.

Personalized Learning-

Students can learn at their own pace and adapt the simulation to their individual needs and learning styles.

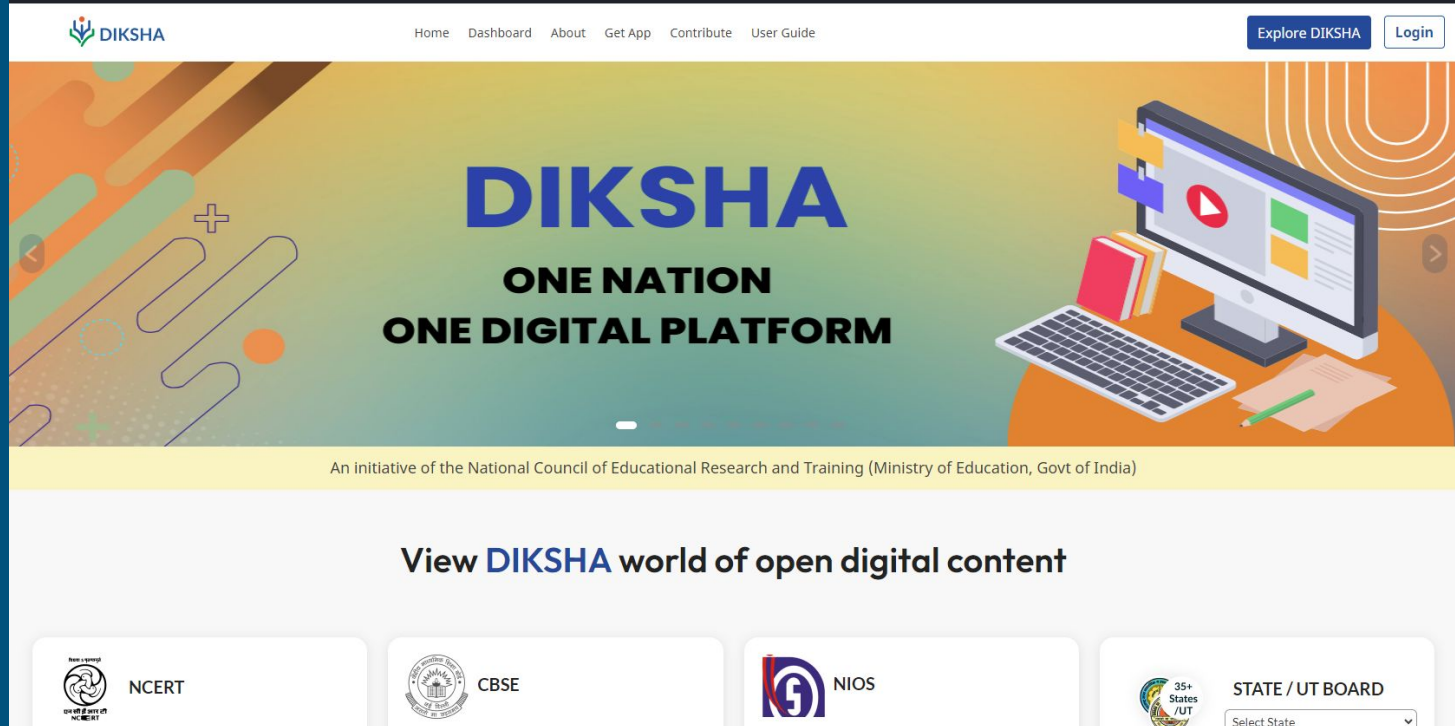
Enhanced Collaboration-

Virtual environments facilitate collaborative learning, allowing students to work together and learn from each other.

Steps to reach at desirable resources of Virtual labs

URL: <https://diksha.gov.in/>

- Search <https://diksha.gov.in/>



- Scroll banners to find Virtual labs vertical and click on its “Explore” icon.

Focus Areas of DIKSHA

e-Jaadui Pitara



Foundational Stage Content with toys, games, puzzles, puppets, posters, flashcards etc.

[Explore](#) →

Education For All



To impart foundational literacy and numeracy, critical life skills for Citizens

[Explore](#) →

Virtual Lab

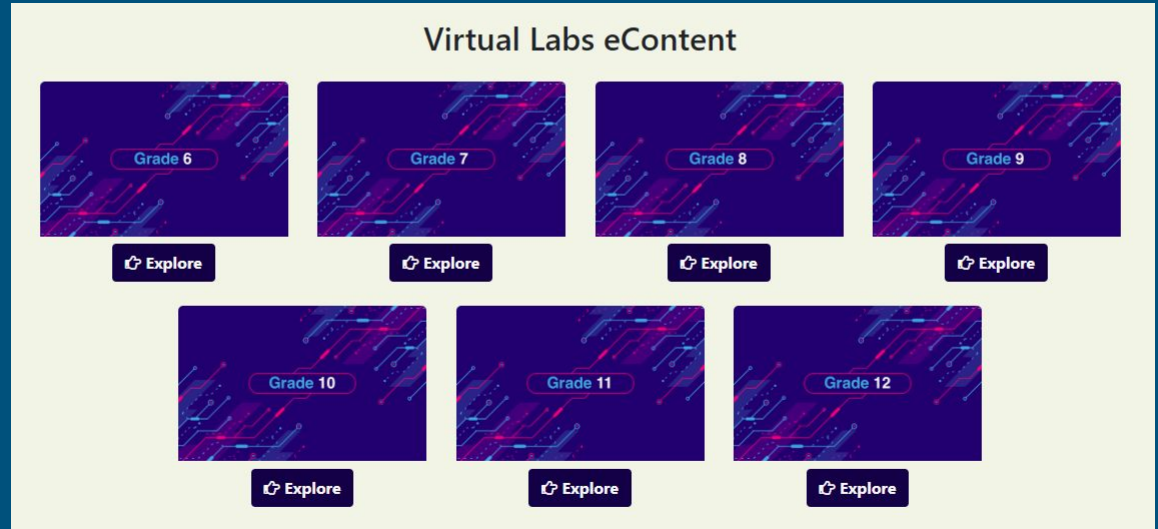


Virtual laboratories access for students to enhance actual laboratory experiences

[Explore](#) →



- Scroll down on the landing page of Virtual labs to reach eContent of classes 6-12.



- Click on the “Explore” icon of the desirable class, select the medium of interaction, then choose a subject you wish to study.

Virtual Labs eContent



Grade 6

🔍 Explore

- हिन्दी Medium
- English Medium
- Mathematics
- Science



Grade 7

🔍 Explore

- हिन्दी Medium
- English Medium
- Mathematics
- Science
- English



Grade 8

🔍 Explore

- हिन्दी Medium
- English Medium
- Mathematics
- Science
- English



Grade 9

🔍 Explore

- हिन्दी Medium
- English Medium
- Mathematics
- Science
- English



Grade 10

🔍 Explore

- हिन्दी Medium
- English Medium
- Mathematics
- Science



Grade 11

🔍 Explore

- हिन्दी Medium
- English Medium
- Mathematics
- Physics
- Chemistry
- Biology
- Computer Science



Grade 12

🔍 Explore

- हिन्दी Medium
- English Medium
- Mathematics
- Physics
- Chemistry
- Biology

- Click on the simulation to perform experiment.

Science Activity
English • Class 7

Share

Stomata in Leaves

RESET HELP MAXIMIZE

Select the Leaf

Leaf of Mango

Mango Leaf

Slide

Water

Coverslip

Learning resource

Simulation-Stomata in Leaves

Self-Evaluation

Credits and Licence information

Developed by Amrita University under research grant from
Department Of Electronics & Information Technology

Virtual Labs provide self paced
engaging learning experience