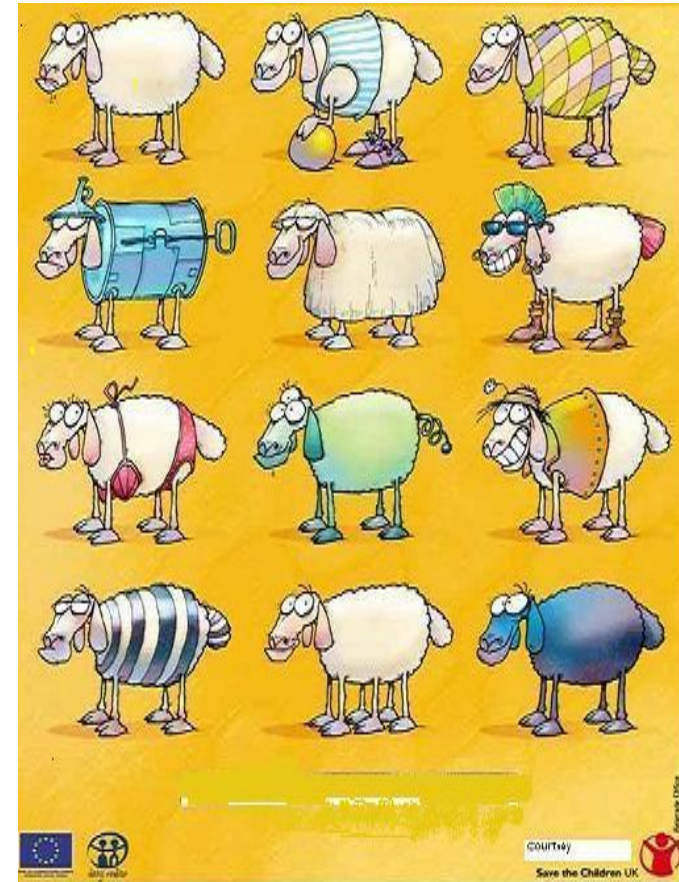# Digital Initiatives for Divyang

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Dr. Anupam Ahuja
Former Professor, Head Department of Education of Groups with Special Needs (DEGSN) and Head International Relations Division
NCERT, New Delhi, INDIA
ahujaa56@gmail.com

ALL EQUAL ALL DIFFERENT

Presentation Outline

- **National Policies for promoting Digital Content**

- **NCERT's Digital initiatives for promoting Inclusive classrooms**

  - ✔ Understanding Inclusive classrooms

  - ✔ Reading Series for All- An innovative UDL based Exemplar

  - ✔ UDL in games

  - ✔ Accessible Textbooks for All

  - ✔ Other initiatives

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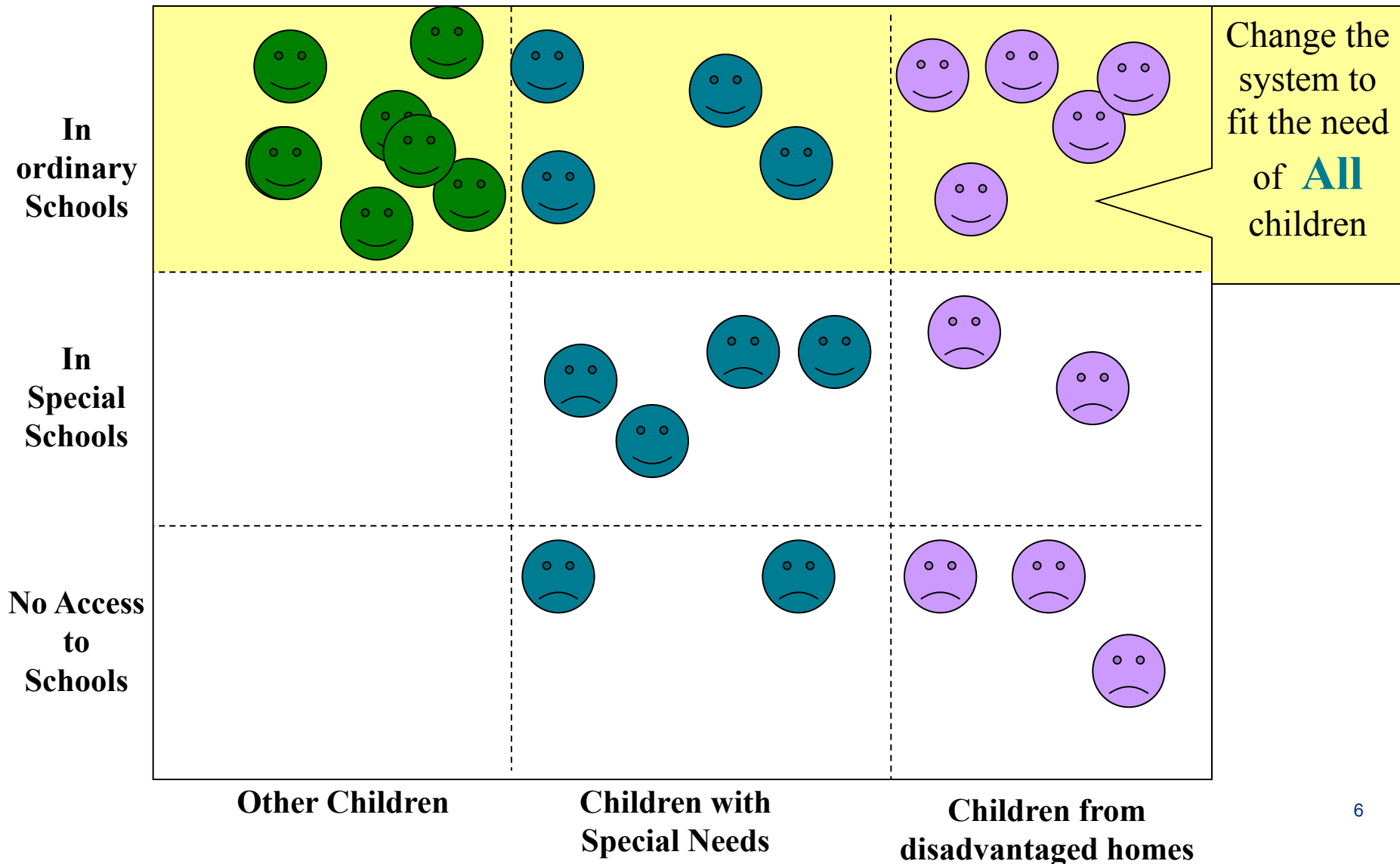
  ✔ Other initiatives

National Policies for promoting Digital Content

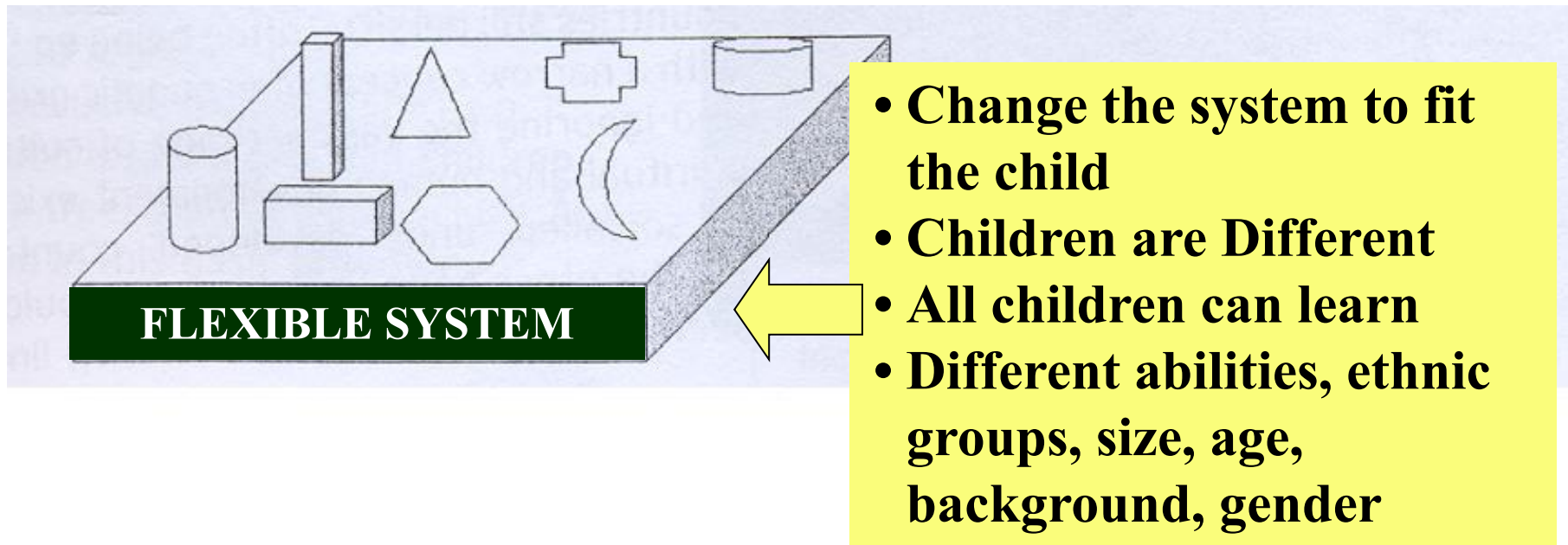| July 2015	**Digital India** programme with a vision to transform India into a digitally empowered society and knowledge economy launched by Hon' Prime Minister
Sep. 2017	**DIKSHA**, a national platform for school education launched to provide accessible e-content to all learners across all the States of India
July 2020	**NEP-2020** launched by Hon' Prime Minister, which laid special focus on use of digital technology to provide accessible content to CwDs
June 2021	**E Content Guidelines** released by Hon'ble MoE to to ensure that Divyang can access digital content with equivalent ease

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School Settings-Inclusive Education

FLEXIBLE SYSTEM

- **Change the system to fit the child**
- **Children are Different**
- **All children can learn**
- **Different abilities, ethnic groups, size, age, background, gender**

Source: Stubbs, S (2002 Inclusive Education: *Where there are few resources;* The Atlas Alliance, in cooperation with NAD

All for the Children

For All the children

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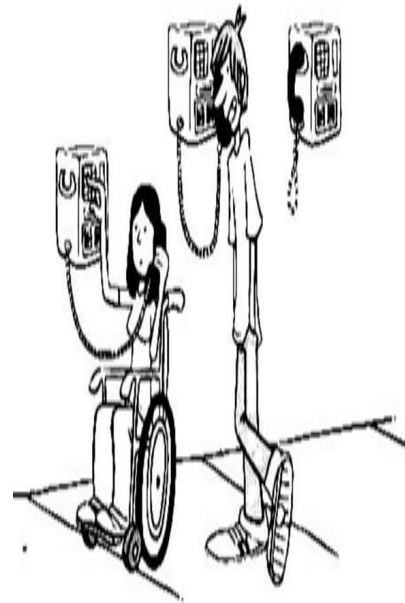
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Promoting Reading
FOR 'ALL'

An Innovative UDL BASED Exemplar of *"A Reading Series for the early years"* - 40 stories based on children's experiences set in the Indian Context
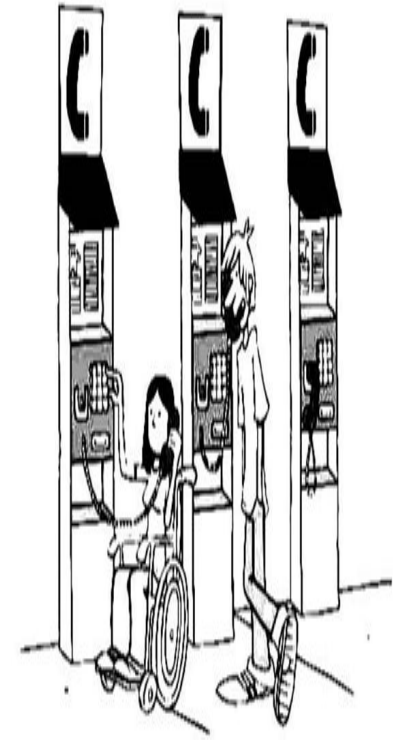
No **'single'**,

'one size' fits all

Customized according to individual needs and requirements of all children

Non-UDL	UDL

▪ **Children have varied background, strengths, needs, and interests**

I like to draw pictures.

I need to have text read out loud!

I like to conduct experiments.
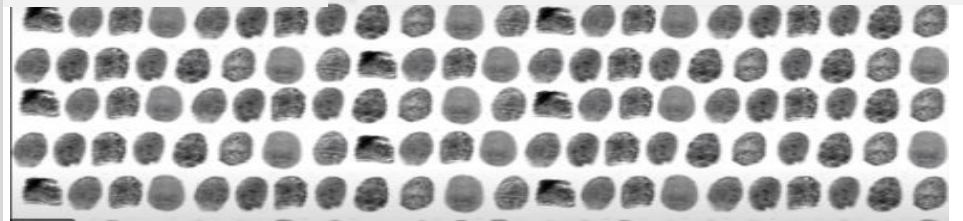
I learn when I see pictures
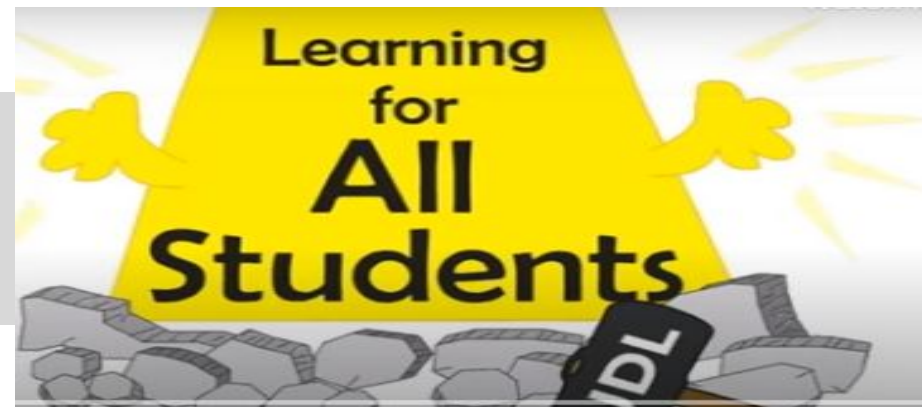
I learn when text is read loud

I learn when I conduct experiments

•**The way the children learn is as unique as their fingerprints (research based evidence)**

•**UDL minimises barriers and maximising learning of each student**

Learning for **All** Students

UDL Principles

Provide Multiple means of **Representation**

Present content and information in multiple forms

- ✔ Print
- ✔ Braille
- ✔ Digital text with options for text enlargement, screen background colour and contrast
- ✔ Text to speech
- ✔ Videos with closed captions,
- ✔ Audio with transcripts,
- ✔ Audio books
- ✔ Sign Language

Provide Multiple means of **Action and expression**

- **Give students multiple options of expressing what they know**
  - ✔ Assignments
  - ✔ Painting
  - ✔ Video
  - ✔ Comic strip
  - • Optimise access to assistive technologies
  - • Provide feedback

Provide Multiple means of **Engagement**

- **Give option that engages all students**
  - ✔ What fires one student won't fire up another!
  - ✔ Give students choices to fuel their interests and autonomy
  - ✔ Help students risk mistakes and learn from them. If they love learning they will persist through challenges

❑ **Department of Education of Groups with Special Needs (DEGSN) of National Council of Educational Research and Training (NCERT) developed a set of forty illustrated story booklets based on UDL principles.**

❑ **The journey involved:**

  ❑ National level workshops with multi- disciplinary teams

  ❑ Research based additional features

  ❑ Field Try-out

❑ **Meant for early readers with varied learning needs in inclusive settings**

❑ **Available in print and digital formats**

- Can be accessed on computers, laptops, mobile phones and tablets.

- Retains all the features of the print version and has
  - ✔ *'How to Use' page*
  - ✔ Content can be viewed in 3 different background colour combinations
  - ✔ Option to increase size of text and image
  - ✔ The introduction of each story in regular and sign language video formats-Helps to arouse curiosity and make reading interesting
  - ✔ Flash cards appear highlighting key words and picture.
  - ✔ Click/tap arrows on the black border to go to the previous or next page

A child may have read any story e.g " Hide and Seek" (*Chhupan Chhupai)* with the additional features in the adapted booklet.

But what if the child does not know the " Hide and Seek" game and has never played this game?

Can we still help him read with meaning and pleasure?

An introduction to each story in video, regular and signed forms helps

– *We all like to play games, some inside homes and some others outside. In this story children are playing Hide and Seek. One child looks for others who are hiding. Let us see how Jeet , looks for Babli and his other friends hiding in different places both inside and outside the home. Does he find them all or does he need some help?*

– *Let us read the story Hide and Seek!*

Innovation based on Tryout of Print and Digital Versions

Feedback Tryout analysed and incorporated in both Print and Digital Versions

Try out at <u>Maharani Gayatri Devi Girl's School, Jaipur, Rajasthan</u>

Try out of the Digital booklet at **Umang, Jaipur, Rajasthan**

Try out of the Digital booklet at **Saksham , Delhi**

Try out at **Blossoms School**, <u>Bhubaneswar</u>

Children's early experiences with the features of this inclusive learning material will lead them to demand similar material in later school years.

It is not enough to talk about inclusive education, One must believe in it

It is not simply enough to believe in it, One must continue to work at it!

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- **Ramu a sighted child is playing with his board game Snakes and Ladder alone.**
- **Brij who is blind and much older, has just joined school. He comes and sits by Ramu in the class.**
- **CAN THEY PLAY together?**

Both of them need to follow what is written and printed on the Playing Board.
Can any additional features can facilitate their play together?

Additional Features facilitate playing together

- **Embossed Snakes and ladder on the playing board**
- **Dice is tactile and makes sound when toppled**
- **Tokens of the game are magnetic and do not fall off the board**
- **Tokens also have tactile marking to differentiate the color**
- **Packaging : allotted space for tokens and dice,portable and easy to carry**
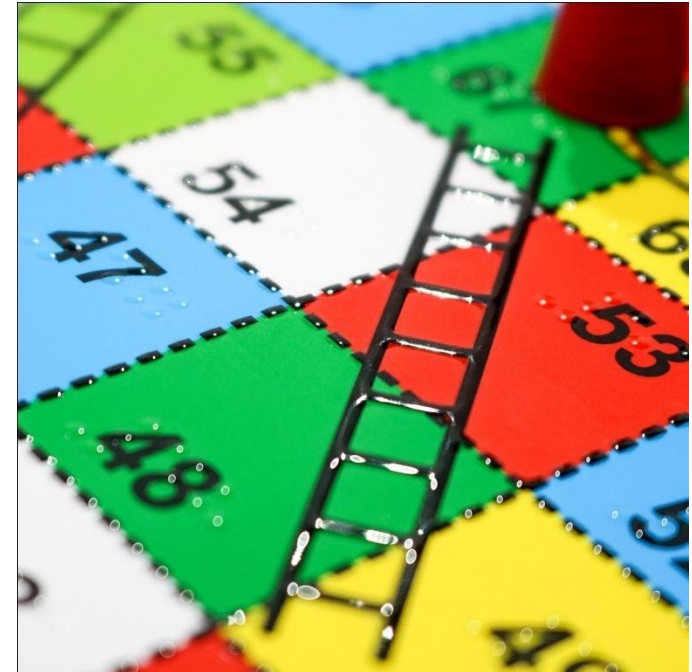
WHILE CHILDREN PLAY TOGETHER

- **They realise that they can both play with a game that looks like any other board game.**

OUR LEARNING

- **UDL material like this in the classroom encourages children's interactions and helps make learning fun!**

- **Helps lay the foundation for inclusion**

- **All children feel equally empowered**

- **Subtly reinforces that no child needs extra help or assistance all the time!**

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- **Based on the principles of UDL and Inclusion, NCERT has also ddeveloped exemplar *"Accessible Textbooks for All"* with focus on children who are widely excluded from activities of reading and learning due to special needs**

Fundamental premise : *Reading is a basic right that must be made available to ALL children*

Beginning the journey

- ❑ Stories and poems from NCERT Textbooks of Class I to V being adapted into multi-media modes:
  - Sign language videos with:
    - ✔ Illustrations,
    - ✔ Audios,
    - ✔ Sub titles and
    - ✔ A teacher using sign language

- Allows learners and educators to choose from amongst multi-media .
- Counters the idea that printed textbooks are the only medium for the reading process
- Fills in a crucial gap by going beyond the "one-size fits all approach"

यहाँ तो सिर्फ एक ही है ।

- **Two type of audio tracks**
  i.   "**Audio track with highly dramatic story telling**"- dramatization, voice modulation, and sound effects that enhance the effect and emotion of the story.
  ii. "**Audio track with fluent reading**", paced and without sound effects. Students can listen to the story while reading the text on their own
- Option for students to choose either of above audio tracks to suit learning style
- Introductory Section - to arouse curiosity, build interest, and scaffold the story or poem
- Concluding Section : Open-ended question on the story/poem- based on the students individual thinking.
- Glossary of difficult words and difficult signs appended to each story and poem.

National Anthem
• **Jana Gana Mana**

Stories and folktales
• **Bahadur Bitto**
• **Ek Din ki Badshahat**
• **Who will be Ningthou**
• **Idgah**
• **Chuskit Goes to School**

Poems
• **Chakai ka Chakdum**
• **Hathi Challam Challam**
• **Purane Bachche**
• **Koi Laake Mujhe De**

- **Collaborative project between NCERT and National Institute of Special Education (NISE) Republic of Korea(RoK)**

- **Adapting key stories and poems from textbooks that have been enjoyed by generations of readers and form the backbone of literary curriculum in the country.**

- **Works towards revolutionising reading material on the principles of Universal Design for Learning and Inclusive Education**

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Accessibility in NCERT Text books-Other Initiatives

- *E-patshala   Digital Textbooks (Class 1-12) in all subjects*

- *E-patshala* **Mobile App-** *Text To Speech (TTS*)

- *Sign Language Video Programmes*

- *Tactile Map Book with Audio programmes*

- *Audio Books*

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  - ✔ Guidelines for the development of e-Content for Divyang Children
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Guidelines have been framed with an aim to promote equitable and inclusive education

SDG Goal 4

"Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"

NEP 2020

"Equitable and Inclusive Education- Learning for All- Provide Children With Disabilities, the same opportunities of obtaining quality education as any other child"(para 6)

RPwD Act 2016

Schools to provide inclusive education -students with and without disability learn together and the system of teaching and learning is suitably adapted to meet the learning needs of students with disabilities

The common thread that runs through Acts, Policies and Conventions is provide **"Equitable Opportunities and Inclusive Education to All Children"**
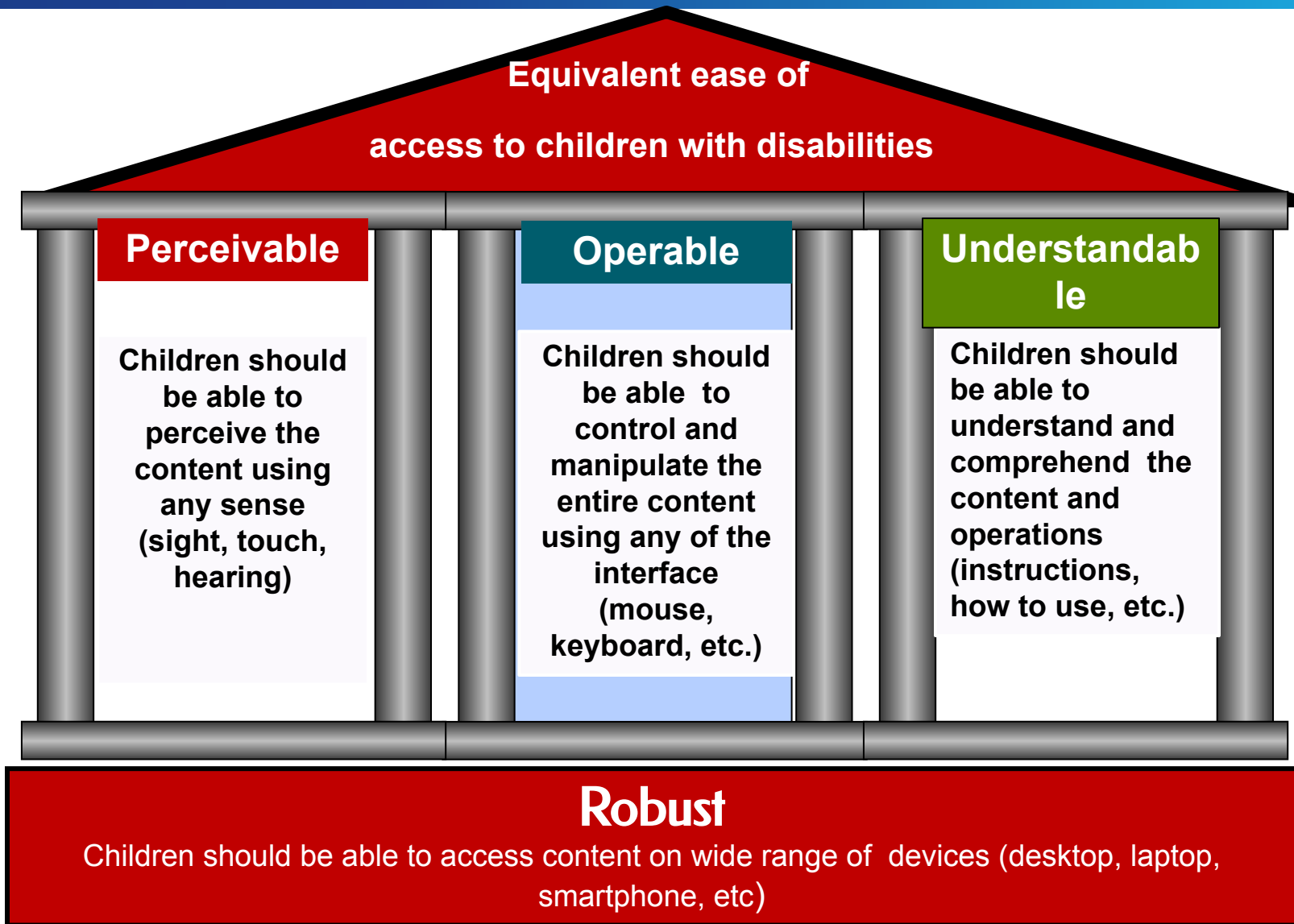
The guidelines are aimed to promote development of high quality accessible content for children with disabilities and strengthen momentum for **"Inclusive Classrooms"** as envisioned in NEP-2020

Section wise Contents

Guidelines have been framed based on four cardinal principles

Equivalent ease of access to children with disabilities

Perceivable

Children should be able to perceive the content using any sense (sight, touch, hearing)

Operable

Children should be able to control and manipulate the entire content using any of the interface (mouse, keyboard, etc.)

Understandable

Children should be able to understand and comprehend the content and operations (instructions, how to use, etc.)

Robust

Children should be able to access content on wide range of devices (desktop, laptop, smartphone, etc)

Guidelines are based on learning of:

- **Development of exemplar materials by NCERT based on the Principles of UDL(Universal Design for Learning)**

- **Development of prototypes of ADTs(*Accessible Digital Textbooks*)by UNICEF and its partners**

If a child can't learn the way we teach, may be we should teach the way they learn."- Ignacio Estrada

Based on the experience of Barkhaa Series for All

- Provide introduction to the topic in the mother tongue/dominant language and sign language at the beginning of each section/topic.
- Provide instruction on "how to use" (in mother tongue/dominant language and sign language) .
- Provide descriptive hyperlinks to access supplementary /additional material.
- Use simple, easy to read language.
- Provide glossary linked to specific words.
- Explain new concepts in multiple ways - diagrams with description , descriptive interactive models, flow charts, decision trees etc.
- Provide a linkage between the textbook concepts and activities by showing images that support the purpose of the activity.
- Test the content with actual target groups before it is uploaded on the portal.

Standards and Guidelines for all three components have been recommended

Compliance of guidelines for during authoring and Publication will lead to "Born Accessible" learning material
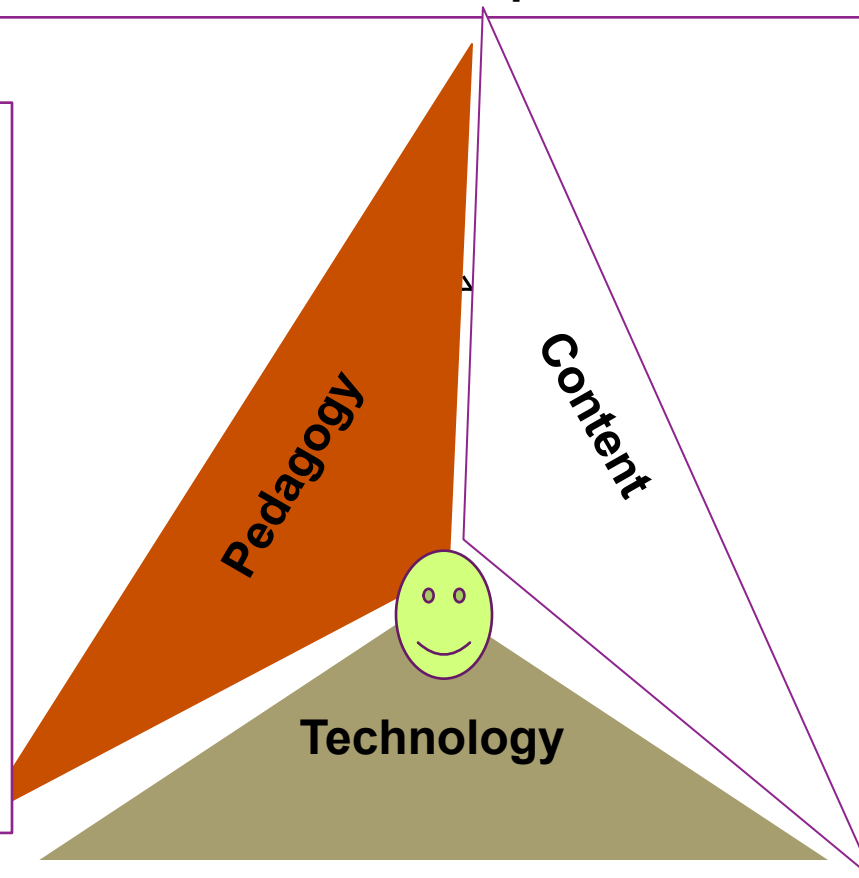
Section 5 exclusively provides guidelines to develop Accessible Digital Textbooks (ADTs) for ALL

Pedagogy

Content

Technology

Guidelines can be used for developing e-Content both academic and other content including self helpskills

Numerous webinars and virtual workshops have already been conducted to disseminate and get feedback for improvements

- **Guidelines comprising of 11 Sections and 2 Appendices can be downloaded from MoE/NCERT websites free of cost**

- https://www.education.gov.in/sites/upload_files/mhrd/files/CWSN_E-Content_guidelines.pdf

Thank you