CIET - Online Training on Digital Technology for Children with Special Needs

Day 4: 14th March 2024

Adaptive Learning through Digital Technology

By

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Acknowledgements and Special Thanks: Mr. Shankar Subbiah S

Types of Disabilities as per Rights of Persons with Disabilities Act 2016 – Country Context

Blindness

Low-vision

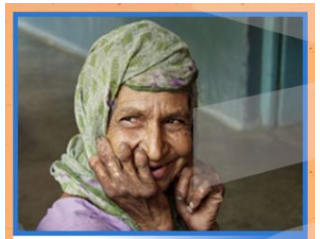
Hearing Impairment
(deaf and hard of hearing)

Speech and Language Disability

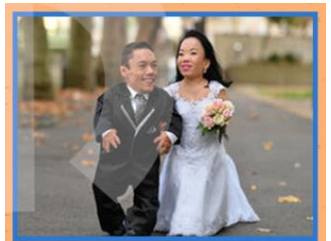
Intellectual Disability

Autism Spectrum Disorder

Multiple Disabilities
including deafblindness

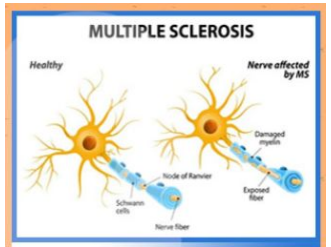

Leprosy Cured Persons

Locomotor Disability


Dwarfism

Cerebral Palsy

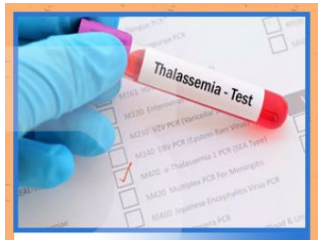
Muscular Dystrophy



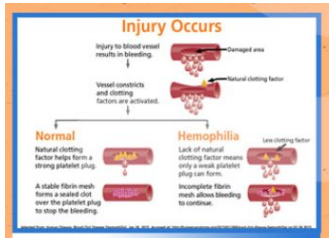
Multiple Sclerosis

Acid Attack Survivors

Specific Learning Disabilities



Thalassemia



Hemophilia

Sickle Cell Disease

Chronic Neurological Conditions

Mental Illness

Parkinson's Disease

Understanding Functional Difficulties for Adaptations needs in Learning

- **Seeing (**things close-up or far away, like objects, faces or pictures due to Total Blindness, Low Vision, Cortical Visual Impairment, Visual Processing**)**
- **Hearing (**sounds like peoples' voices or audio due to Hard of Hearing, Deafness**)**
- **Gross Motor activities (**standing, walking, positioning, sitting, climbing, lifting, extending, swinging**)**
- **Fine Motor activities (**using hands and fingers, such as picking up small objects like button or holding pencil, rotating compass, drawing or opening and closing containers**)**

Understanding Functional Difficulties for Adaptations needs in Learning (Contd.)

- **Speaking (**oral speech, not clear for understanding, stammering, conversing in own or other language**)**
- **General Learning related (**remembering, organising, understanding, comprehending, reasoning**)**
- **Specific Learning related (**reading, writing, motor coordination, calculations, specific language grammar**)**
- **Behaviour / Attention / Socialisation related (**focusing, concentration, behaviour adjustments, accepting changes, group work**)**
- **Emotions (**sad or worried, depressed, anxious**)**
- **Health Conditions (**treatment, medications, fatigue**)**

Educational Environment for Adaptive Learning

SAMAGRA SHIKSHA

सबको शिक्षा, अच्छी शिक्षा

HOLISTIC EDUCATION FOR HOLISTIC DEVELOPMENT

Inclusive Schools

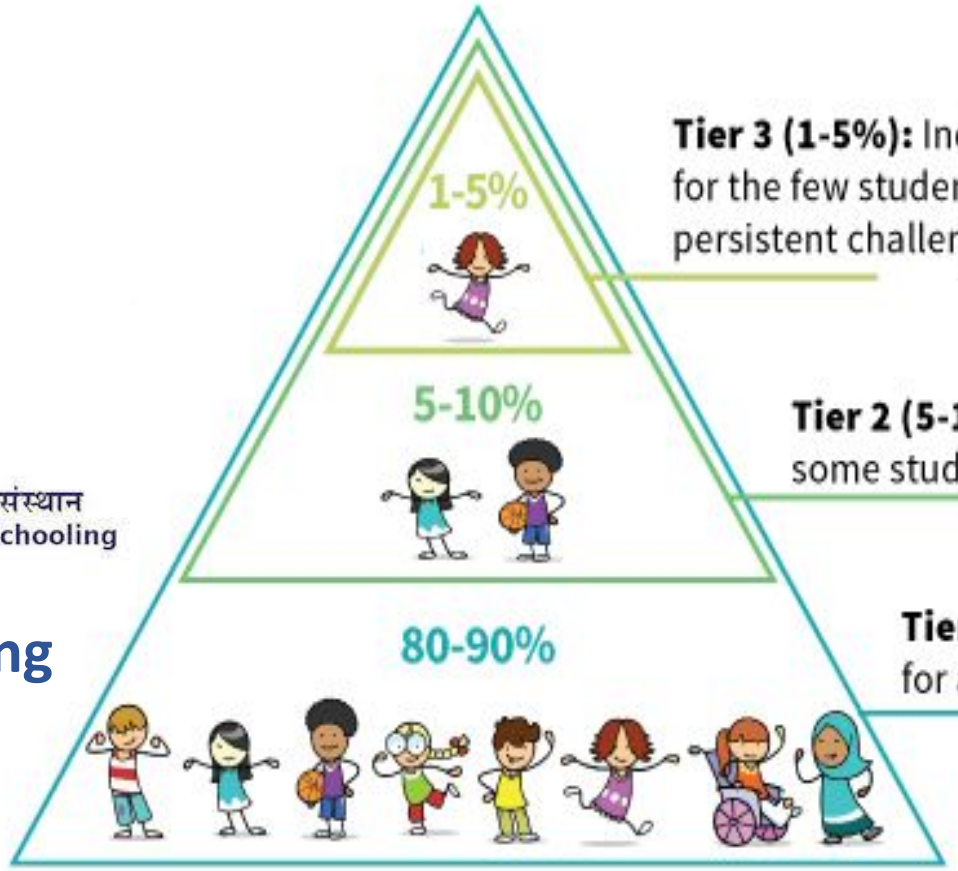
Special Schools

राष्ट्रीय मुक्त विद्यालयी शिक्षा संस्थान

National Institute of Open Schooling

(The Largest Open Schooling System in the World)

Open Schooling



Tier 3 (1-5%): Individualized support for the few students with intensive and persistent challenges

Tier 2 (5-10%): Targeted support for some students who are at risk

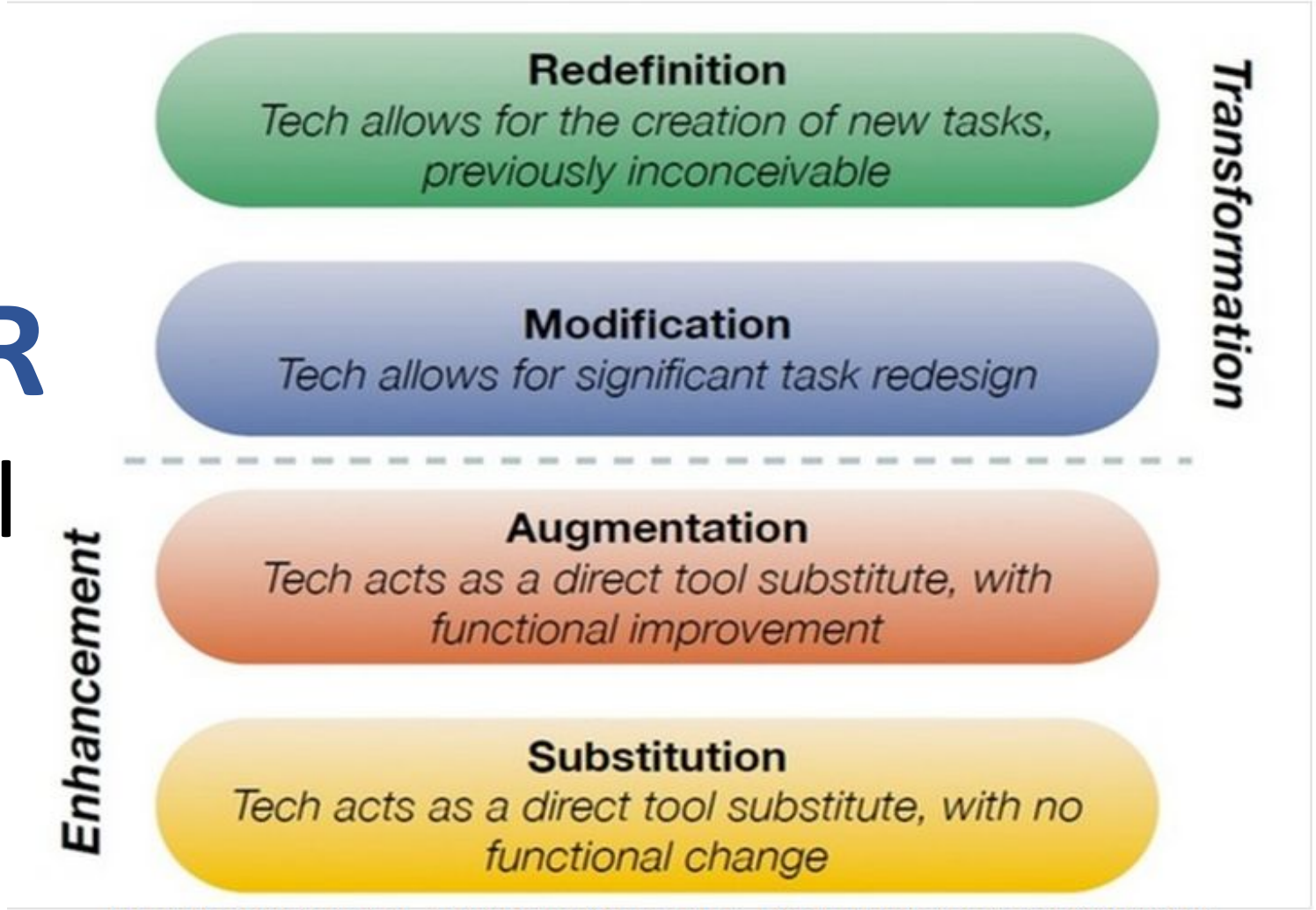
Tier 1 (80-90%): Universal support for all students

Multi-Tiered Support System for Academic and Behavioral supports

Why Digital Technology in Teaching and Learning Environment?

Teaching

SAMR Model



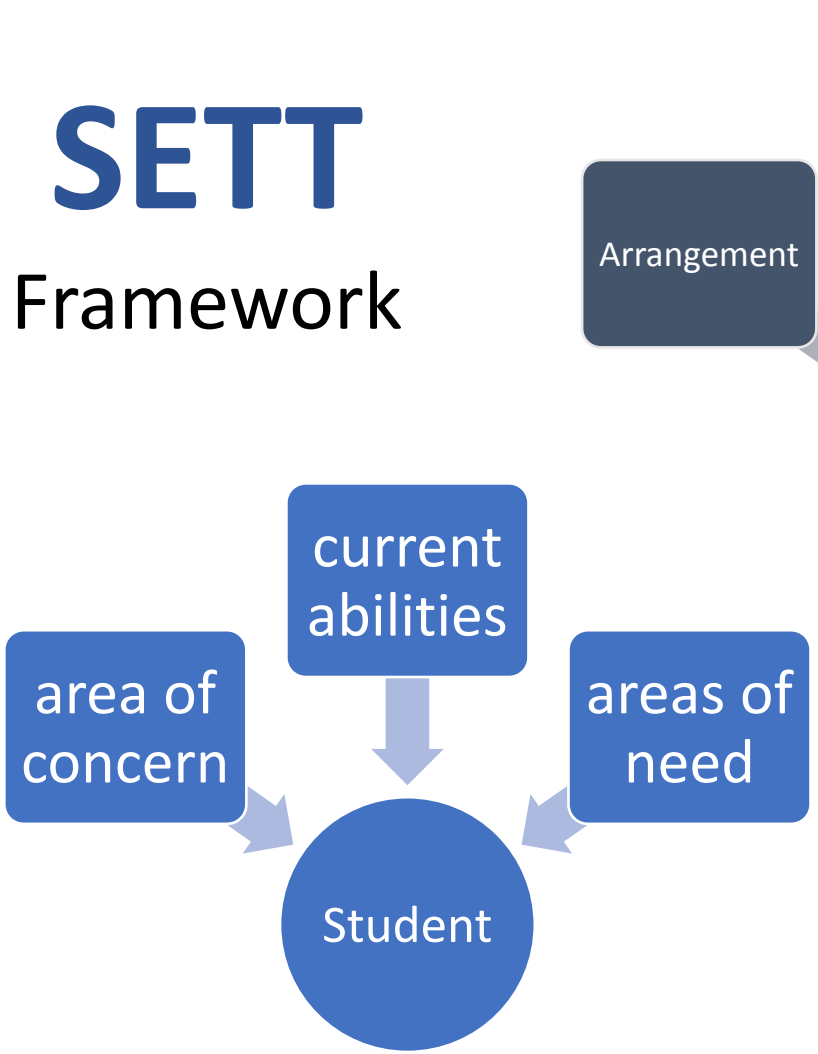
Learning

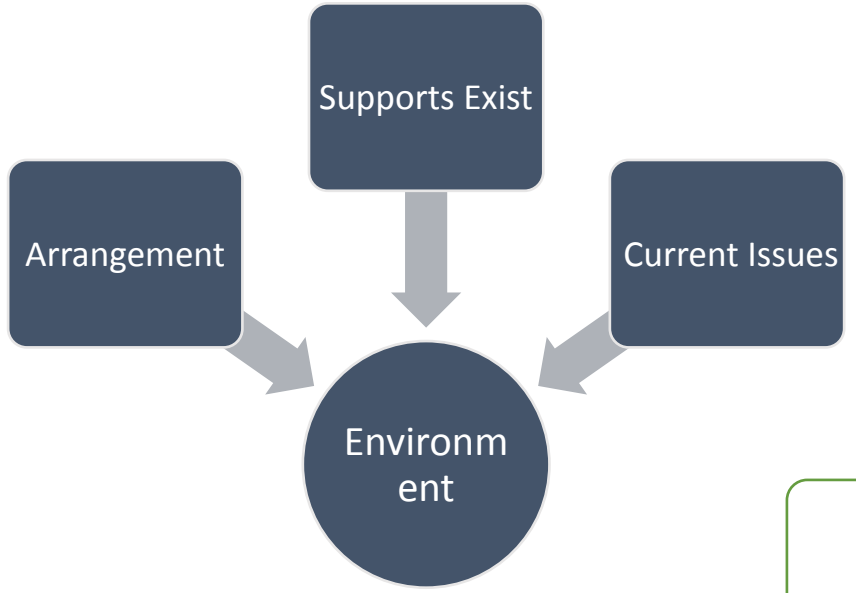
Image the creation of Dr. Ruben Puentedura, Ph.D. http://www.hippasus.com/rrpweblog/

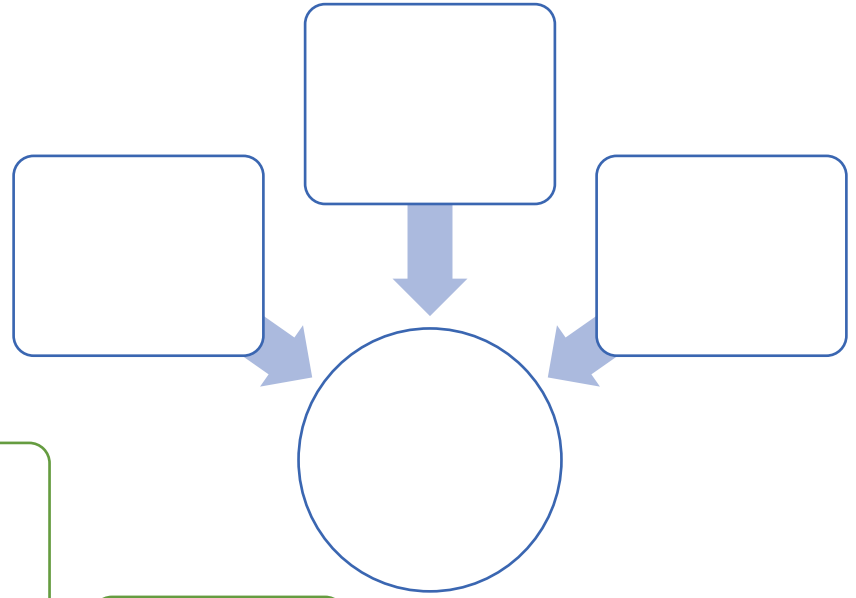
How Digital Technology in Teaching and Learning Environment?

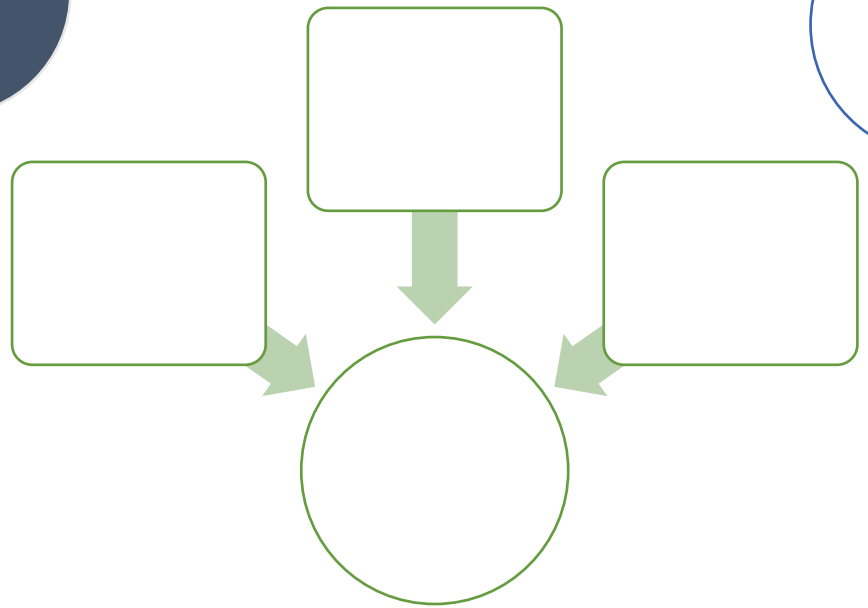
SETT

Framework

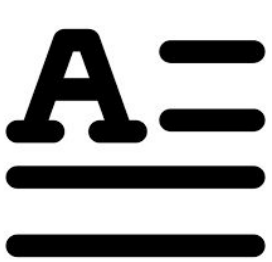




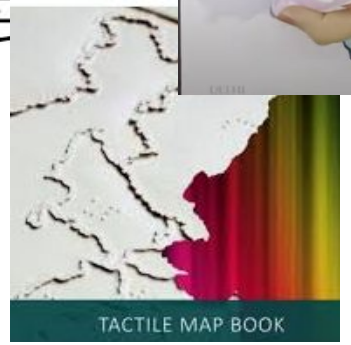




What content delivery options are available for Adaptive Learning?



Formatted / Enlarged Text / Digital Braille



Visual Graphics / 3D Printed Models / Tactile (Touch and Feel) Graphics))

Audio / ePUB Books with Highlighted, Read aloud, Magnified, Line Reading

Presentations / Videos with Captions / Sign Language Interpretations

What to do in Content for Adaptive Learning through Technology implementation?

Fonts for use (Print / Presentations)

Arial	abcdefghijklmnopqrstuvwxyz
Calibri	abcdefghijklmnopqrstuvwxyz
Verdana	abcdefghijklmnopqrstuvwxyz
Comic Sans MS	abcdefghijklmnopqrstuvwxyz
Open Dyslexic	abcdefghijklmnopqrstuvwxyz

- Fonts Size - Min. 12 points for Print materials
- Fonts Size - Min 20 / 24 / 28 points for Presentations
- Line Space – Min 4 points higher than Fonts size
- Text - Avoid **Underlining,** *italics,* BLOCK CAPITALS (for Headings, Content)
- Use **Bold** for emphasis.
- Use Red, Blue, Orange, Yellow, Green, colours appropriately.

What to do in Content for Adaptive Learning through Technology implementation

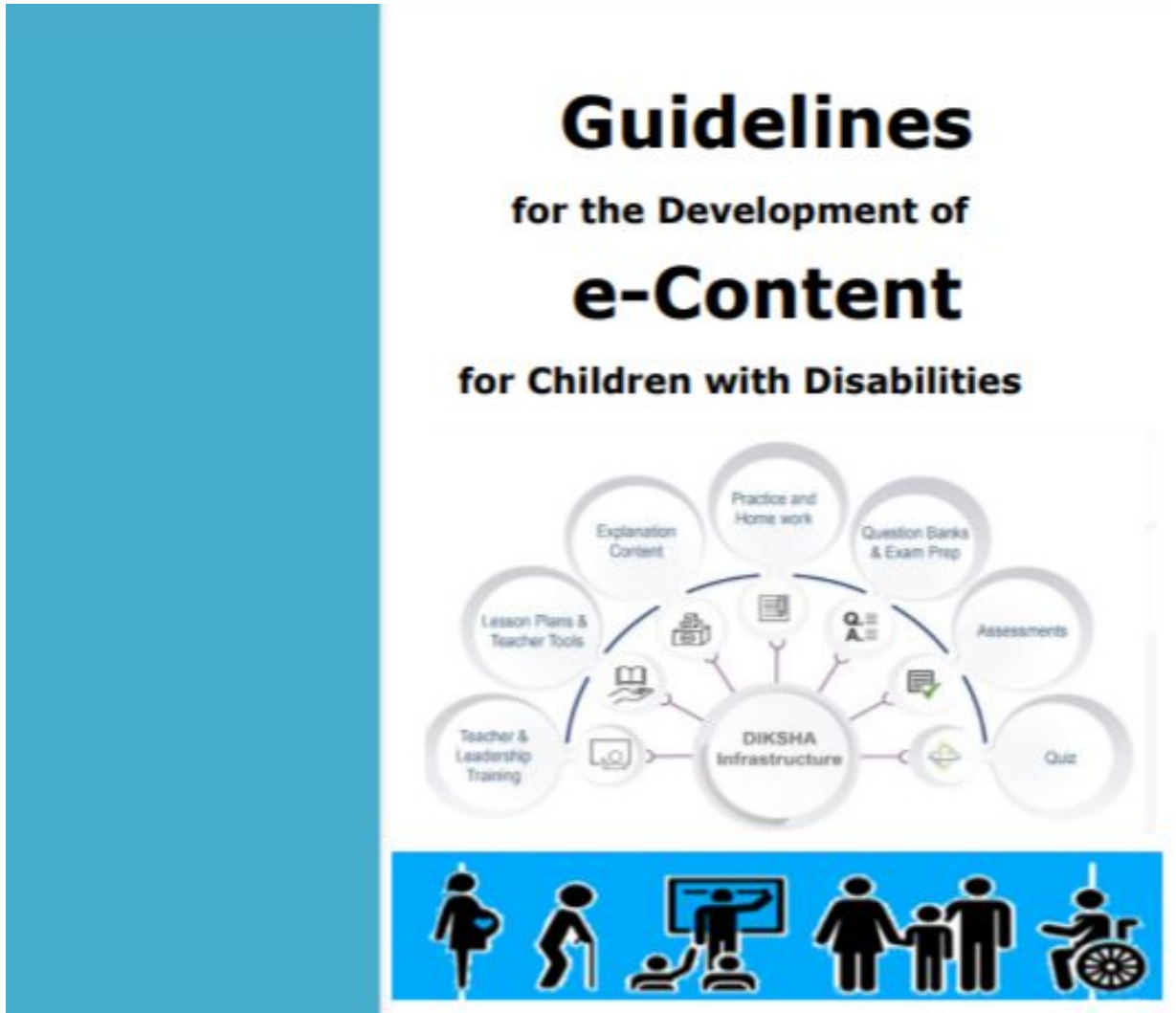
Bad Examples	Good Examples
Red on black is bad	Yellow on black is good
Blue on orange is bad	Black on orange is ok
Red on green is bad	White on green is good
Grey on purple is bad	Aqua on purple is ok

Text / Background Contrast Colours (Min 70%)

Alternative Text for Images / Captions

YouTube Studio – Transcripts / CC Enable

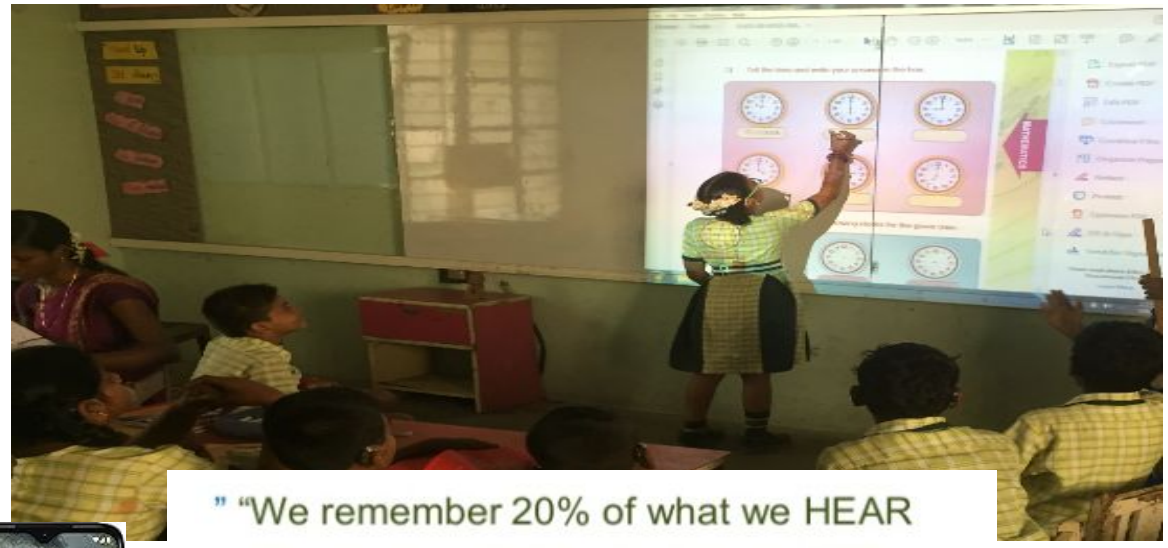
Born Accessible e-Content Guidelines by NCERT and DoE, GoI



What presentations modes can be planned in the process of Adaptive Learning?

Presentations with support of Applied Digital Technology

Class Board Nearer to Children Participating



" "We remember 20% of what we HEAR
We remember 30% of what we SEE
We remember 50% of what we SEE & HEAR
We remember 90% of what we SAY & DO"

"I hear, I forget
I see, I remember
I do, I understand

Inclusive Participatory Classrooms

TV with HDMI Port

+

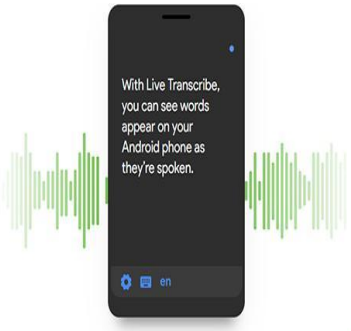
Android Box

+

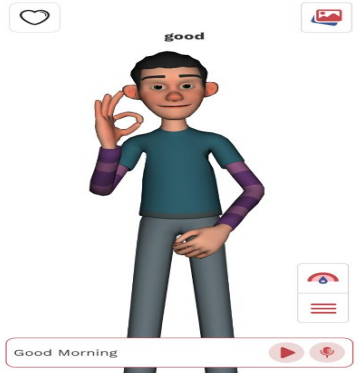
Smart Phone

How to communicate, express, participate for Adaptive Learning in Classrooms?

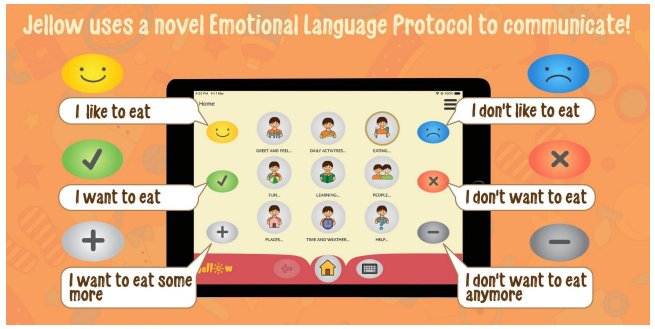
Communication Charts

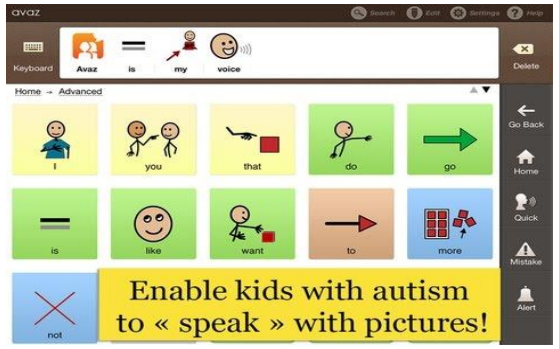


Live Transcribe

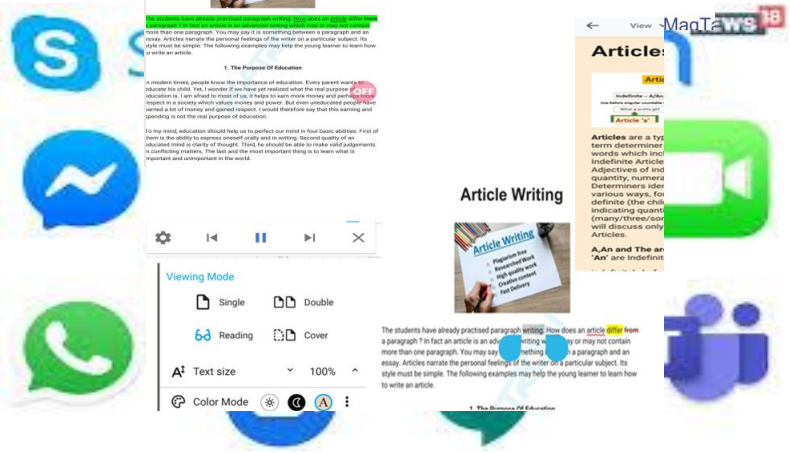


Indic AI



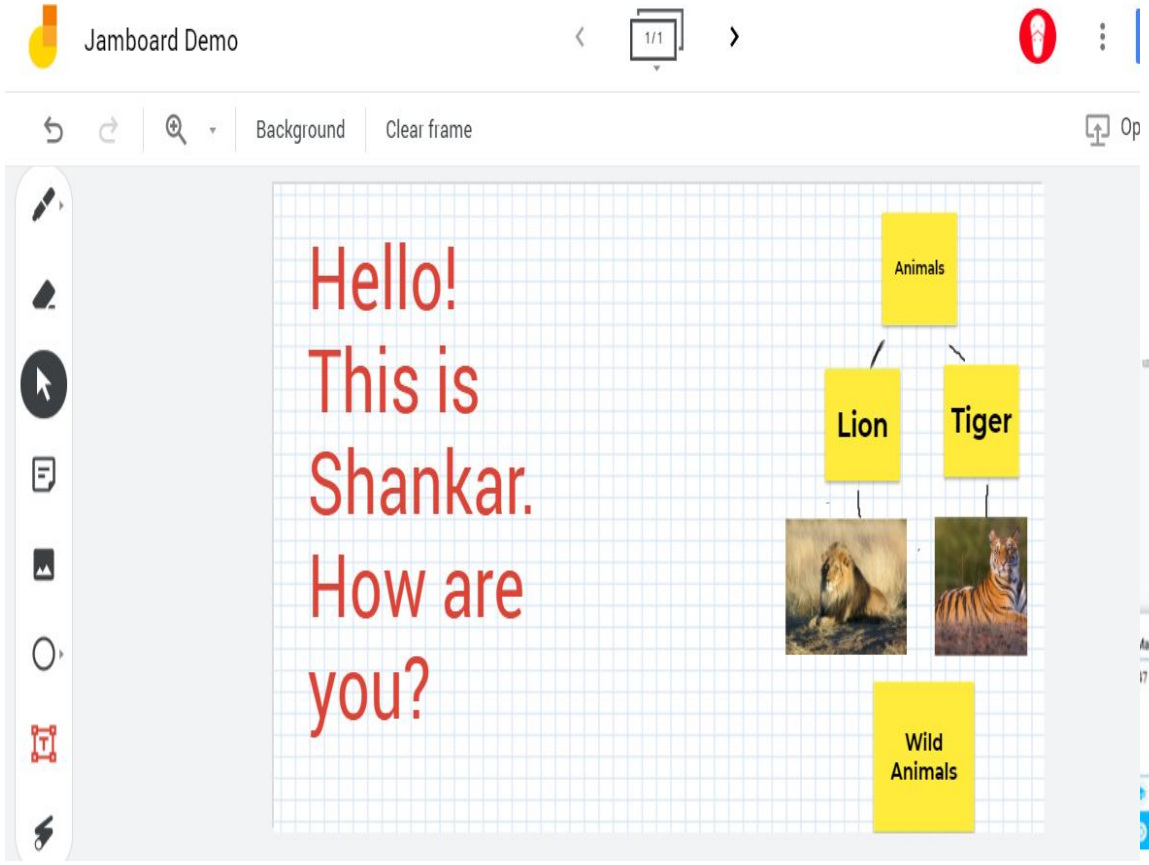


Jellow Plus, KAVI PTS, AVAZ, - AAC Apps and iGest Device



Accessible Social Media, Video Call and Meeting Apps

How to do Interactive Activities for Adaptive Learning Online?

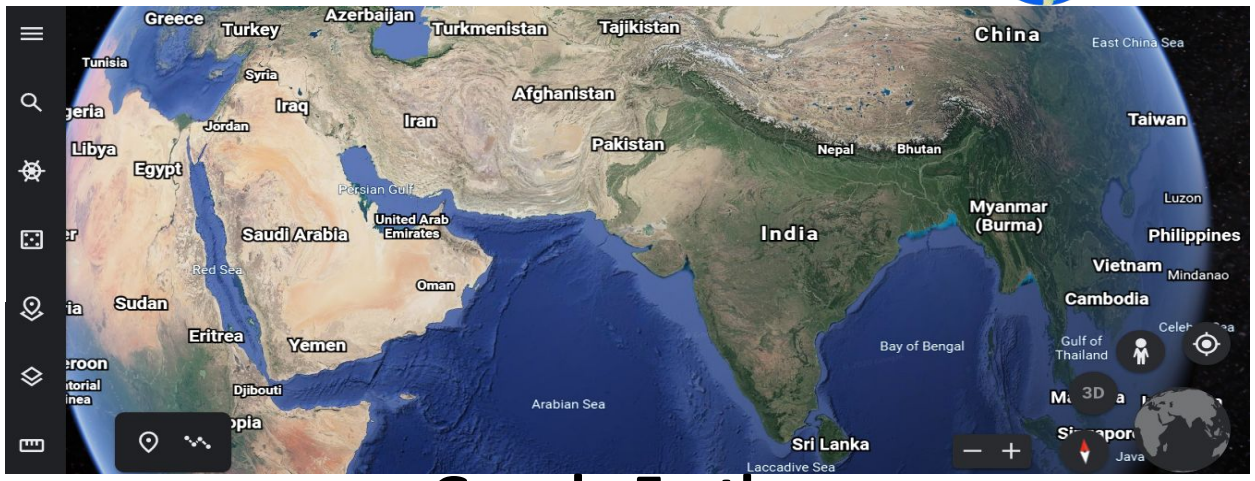


Jamboard (jamboard.google.com) /Jamboard App in Google Play Store

Presentations for Adaptive Learning

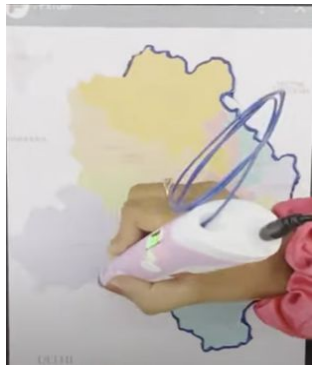
Learning Our Earth as an Example

Globe



Google Earth

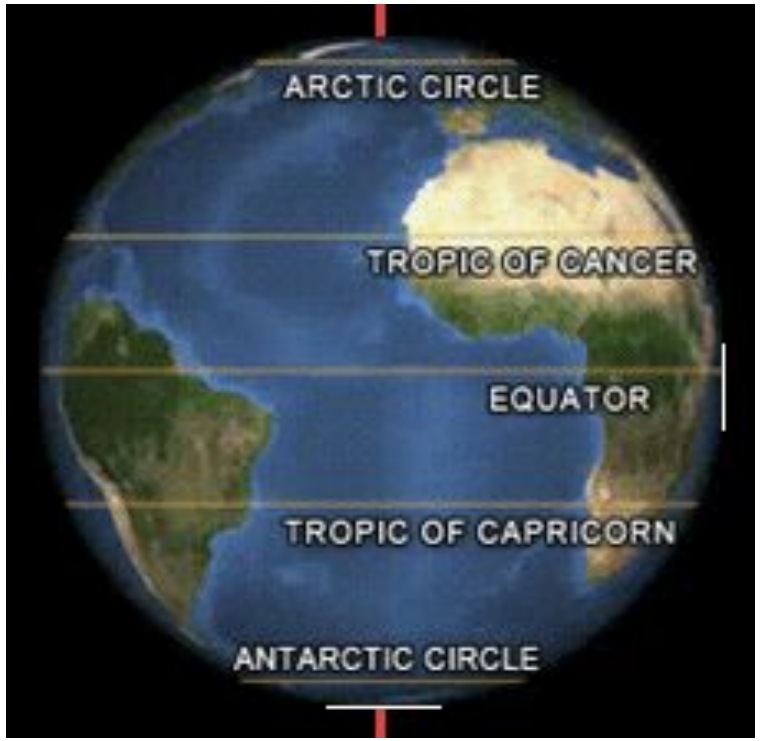
Tactile Graphic Map



Draw 3D Earth Map

Sign Language

Equator

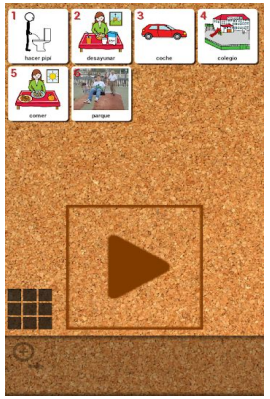


Tropic

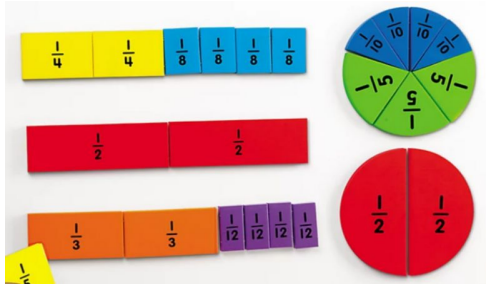
Presentations for Adaptive Learning (Contd.)

Learning Fractions as an Example

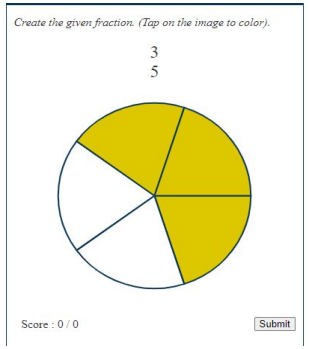
Visual Timers (Time Timer)



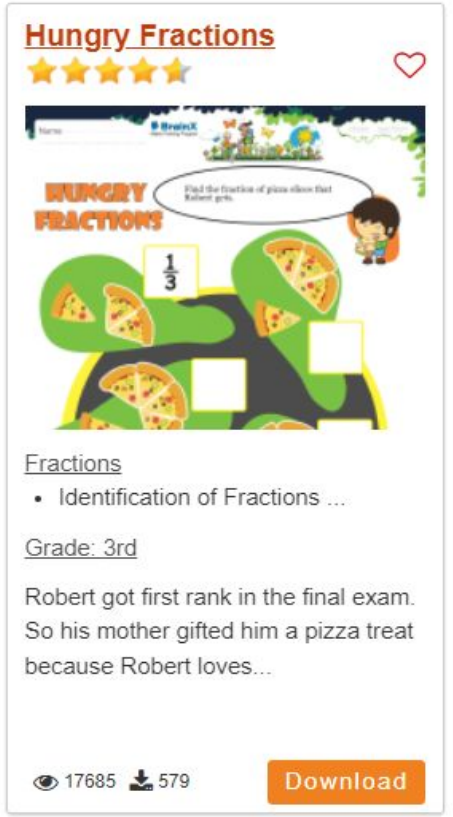
Pictogram Agenda (Steps and Procedures)



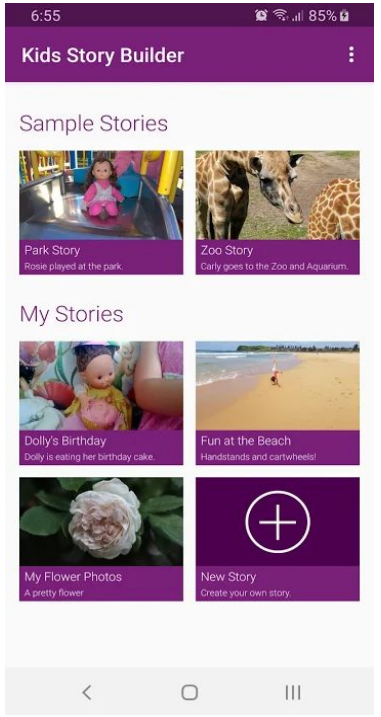
3D Models / Tabletops out of Cardboards / Foam (Touch, Feel, Join, Separate and Learn



Online Games



Worksheets (Do and Learn)

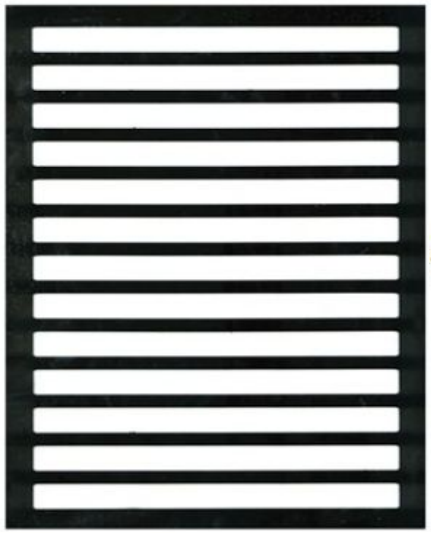


Kids Story Builder

How to do Activities and Express in the process of Adaptive Learning in Classrooms?

Writing / Drawing can be made easier / Joyful

Raised Line Paper

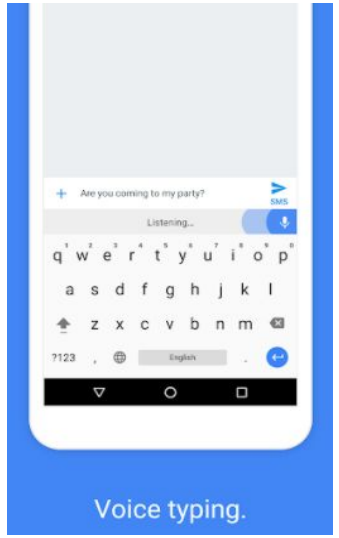


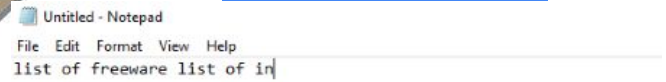
Writing Guides

Hand Grips

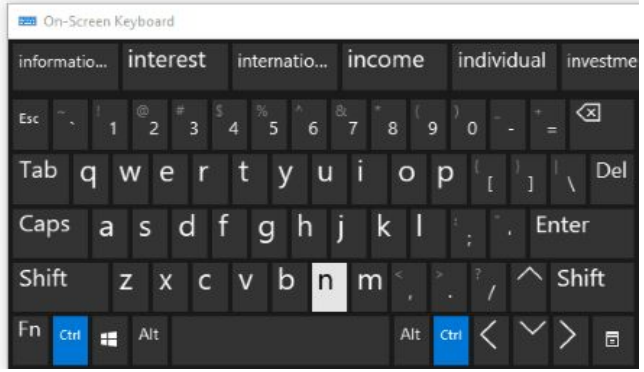
Slant Boards

GBoard Google Voice / Draw Typing





On Screen Keyboard with Word Prediction



Assistive Technology for access to Computers and Mobile devices for Children with Difficulties in Movements, Positioning

Touch Screen

Head Gear Pointer

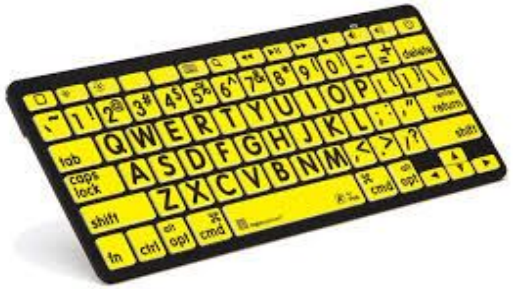
Mouth Pointer

Gesture Mouse

Broad Hit Mouse

Trackball

Mini Keyboard



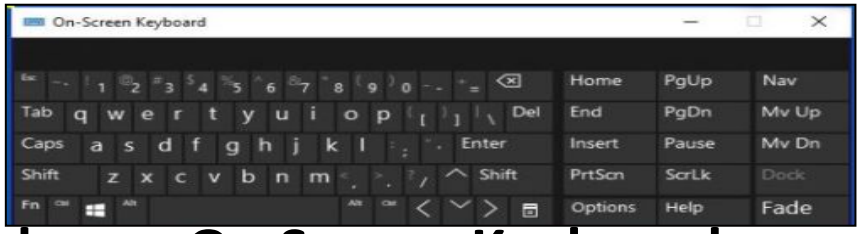
Bright Keyboard

Foot Mouse

Head Movement Mouse

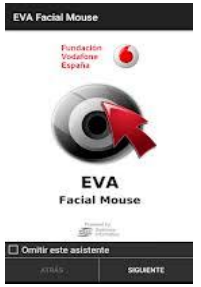
Smiley Ball

Hard Hit Keyboard



On Screen Keyboard

GBoard



Mobile Face Pointer

Assistive Technology for access to Computers and Mobile devices for Children with Difficulties in Movements, Positioning

Thank You All For The Opportunity !