ITU Webinar

Asia & the Pacific Regional Dialogue on Digital Transformation: **Gearing up for Inclusive & Sustainable Development**

Session 9: *Digitally Accessible Asia-Pacific*

9 December 2021
13:00 – 13:55

Disability-inclusive Digital Accessibility **User Perspective**

National Council for the Blind, Malaysia
Wong Yoon Loong

Content

- Persons with Disabilities
- Website Accessibility: Myths & Truths
- Accessibility Standards

PERSONS WITH DISABILITIES
Who?

#WeThe15

= Persons with disabilities,
15% of the global population

PERSONS WITH DISABILITIES

Who?

Asia-Pacific:

- **690 million** persons with disabilities
- Vision
- Hearing
- Mobility
- Cognition / Learning
- Neurodiversity
- Speech / language
- Psychosocial
- Multiple disabilities (e.g., Deaf, blindness)

PERSONS WITH DISABILITIES

Who?

Asia-Pacific, 2050:

- 1.3 billion senior citizens
  (1 in 4 aged 60 & above)
- More ageing-related disabilities

PERSONS WITH DISABILITIES
Who?

SOME DISABILITIES ARE INVISIBLE

PERSONS WITH DISABILITIES
NCBM Survey

NCBM Survey (Ongoing):
219 Respondents (Persons with Disabilities)

Interim Results

31% No Internet access

49% Internet access unchanged in the pandemic

20% Do not own smart devices

PERSONS WITH DISABILITIES
NCBM Survey

COVID-19 pandemic, Internet access:

NO INTERNET ACCESS = No access to services & studying, increased feelings of isolation

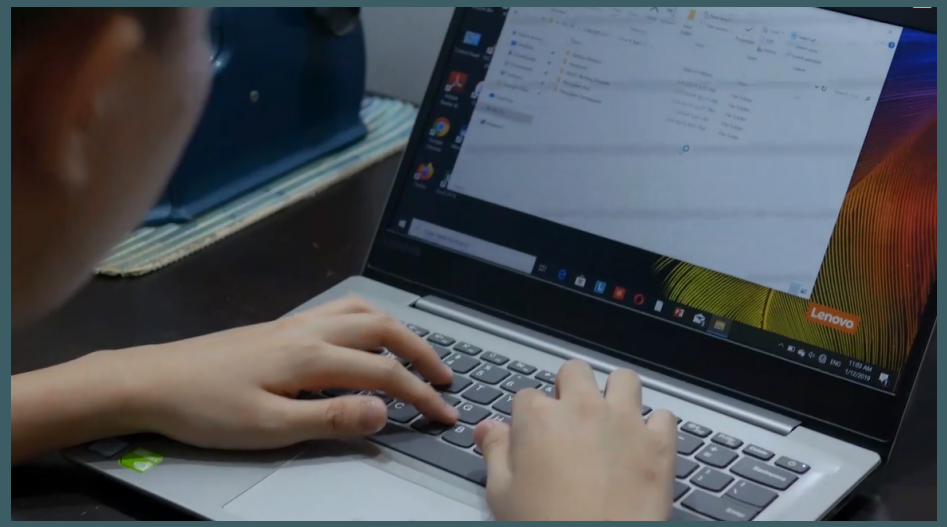
Most respondents spent more time online:

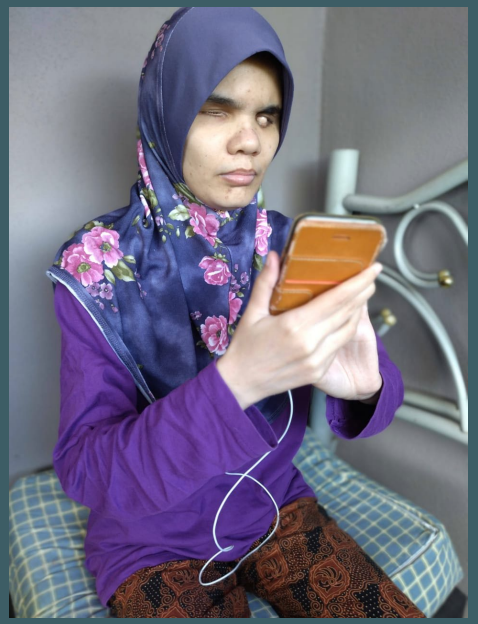
- ✓ Reading (news)
- ✓ Learning
- ✓ Socializing
- ✓ Banking

Average per month for Internet services: **MYR130**

PERSONS WITH DISABILITIES
Print-disabled Users

Screen Reader
(audio content & voice feedback)





Blind screen reader users:
University student, Ernest & graduate research assistant, Alfa

PERSONS WITH DISABILITIES
Extensively Disabled Sighted User Benefit

Screen Reader: Wider Benefit

Yana's 15 Support Items for ICT Access

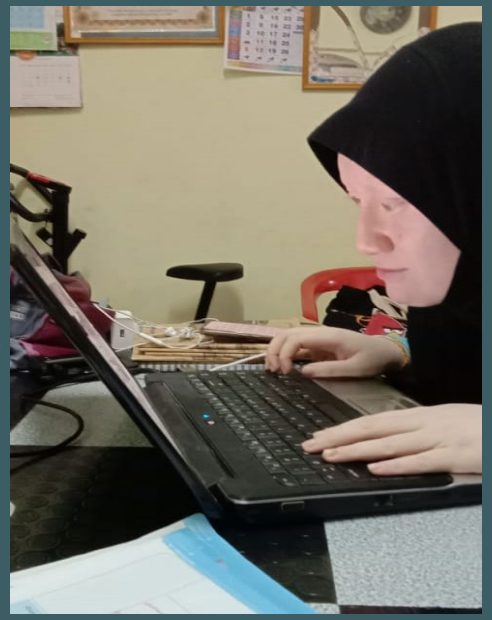
1. Neck brace
2. Wrist splints
3. Specialized ergonomic keyboard, mouse & keypad
4. Bluetooth headphones
5. Ergonomic gamer chair
6. Small bolster to support neck when seated

PERSONS WITH DISABILITIES
Extensively Disabled Sighted User Benefit

7. Backjoy seat cushion
8. PC table with adjustable legs
9. Small bluetooth keyboard
10. Angle adjustable folding lap table
11. Adjustable folding tablet / phone stand
12. Android Voice Assistant
13. Android Live Transcribe
14. iPhone Speak Screen
15. **NVDA**

PERSONS WITH DISABILITIES
Print-disabled User Benefit

Screen Magnification for Low-Vision Users



Aishah
university student of park & amenity management

Baby Hud Mikael &
online entertainment

PERSONS WITH DISABILITIES
Print-disabled Users, Assistive Tech

Evo E10 DAISY Digital Recorder/Player, allows a print-disabled person to:

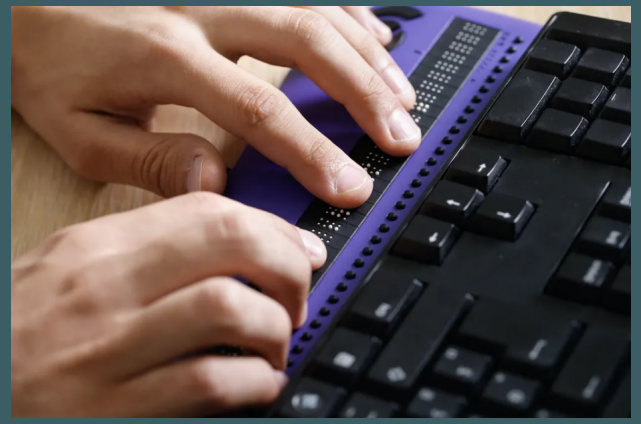
- ✓ Read digital talking books & audio material
- ✓ Access e-text / computer-generated material
- ✓ Record information

https://saktek.in/evo-e10-from-saksham.html

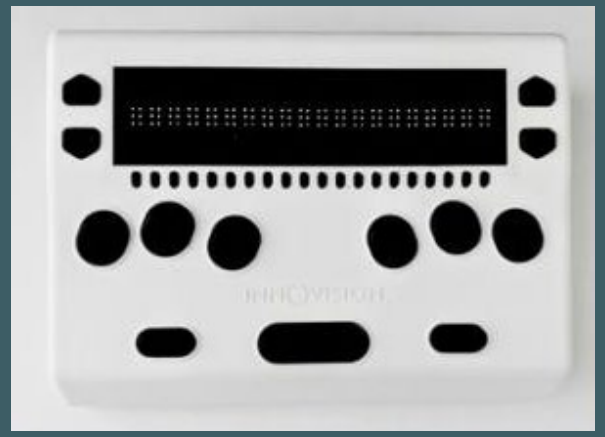
PERSONS WITH DISABILITIES

Print-disabled Users, Assistive Tech

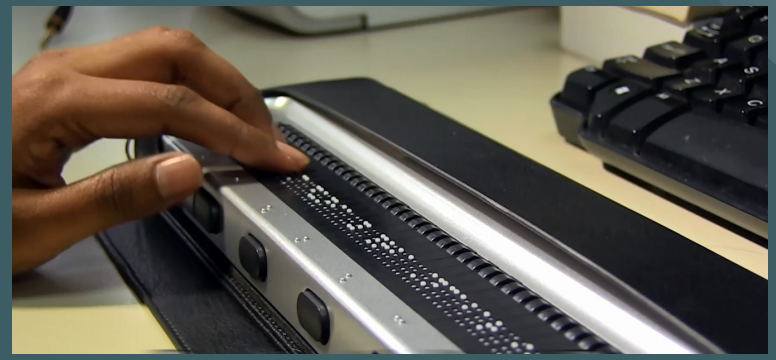
Refreshable Braille Display (Braille Terminal)



Refreshable Braille
(also called Braille Display Device)



Braille Me



Braille Edge
(a Braille Display Device)

PERSONS WITH DISABILITIES

Print-disabled Users, Assistive Tech

Refreshable Braille Display (Braille Terminal)

Braille Edge

Orbit Reader

PERSONS WITH DISABILITIES
Print-disabled Users, Assistive Tech

Braille production

Manual Brailler

Thermoform Machine

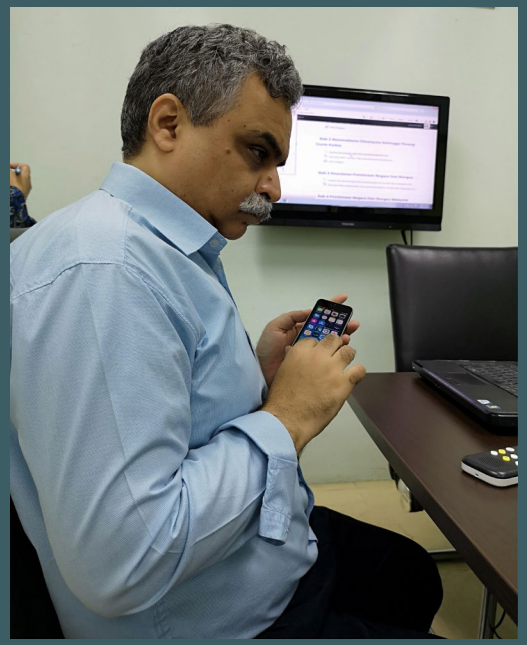
Brailon Thermoform Paper

PERSONS WITH DISABILITIES
Print-disabled Users, Assistive Tech

Braille production

Braille version of Government math textbook

PERSONS WITH DISABILITIES
Print-disabled Users, Assistive Tech



Dipendra Manocha
Saksham Co-founder &
prime mover of Raised Lines.

https://saksham.org/

Raised Lines Foundation
80G and 12AA Certified

https://www.raisedlines.org/

PERSONS WITH DISABILITIES
Sighted User with Speech Impairment

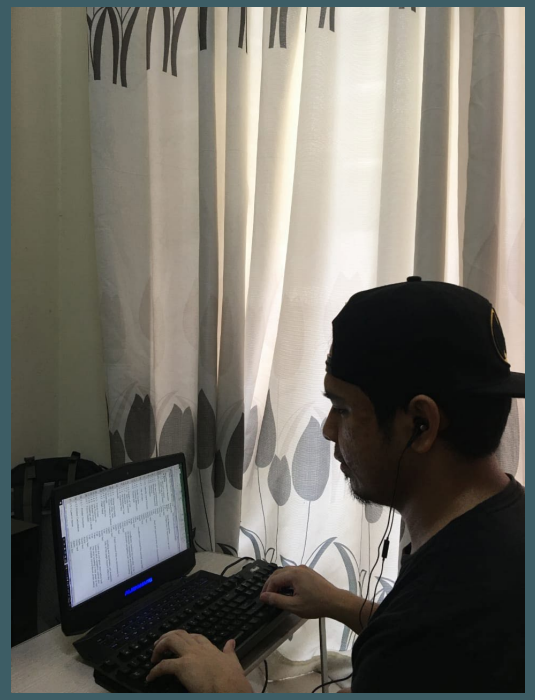
Text-to-Speech Software: Wider Benefit

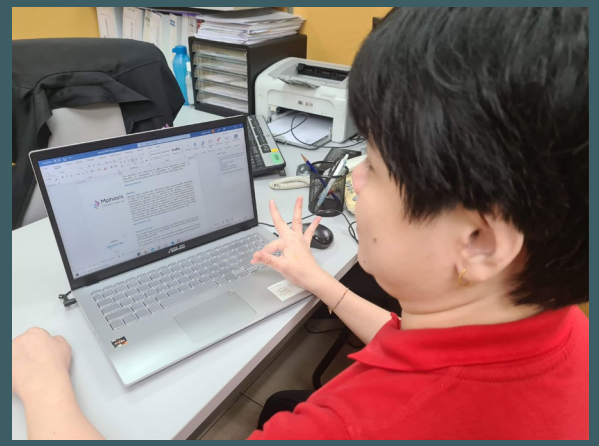
Chin Chin
user with cerebral palsy

PERSONS WITH DISABILITIES

How We Browse the Internet

- Screen reader
- Screen magnification
- Refreshable Braille Display



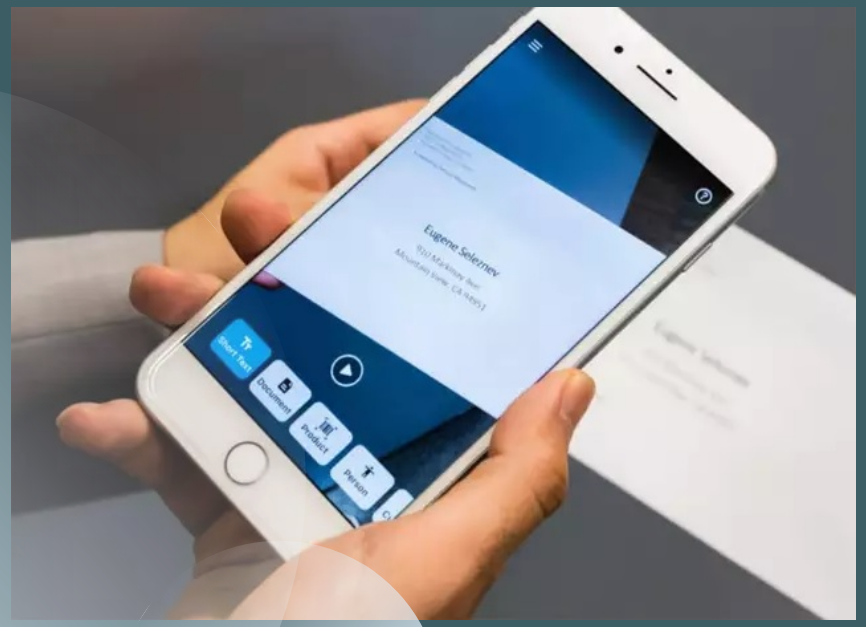


- Captions
- Sign language

- Joystick
- Trackball
- Switch interfaces
- Head mouse (*for hands-free computer control)*
- On-screen keyboard
- Voice input
- Google This (*for users who cannot use a physical keyboard)*

PERSONS WITH DISABILITIES
How We Browse the Internet

- Clear interfaces
- Large text
- Graphical representation



WEBSITE ACCESSIBILITY
Myths **& Truths**

- ✖ Accessible websites: ugly & boring
  Accessibility has nothing to do with its visual look & feel

- ✖ Accessible sites: few beneficiaries
  15% population have some kind of disability

- ✖ Automated evaluation tools suffice
  Automated tools cover only 30% of accessibility testing.
  Example: can the automated tool decide whether alt text is appropriate?

WEBSITE ACCESSIBILITY
Myths **& Truths**

- Web accessibility: expensive, time-consuming, hard to implement
  Depends on actual product quality, if user experience has problems, junk code

- Web accessibility is optional
  Not really, it's mandated

- Web accessibility: developers' sole responsibility
  Everyone has a role

- Making website accessible: limited benefits
  Search engines, cost savings, low band width users, mobile users

ACCESSIBILITY STANDARDS

- Web Content Accessibility Guidelines (**WCAG**)
- Web Accessibility Initiative – Accessible Rich Internet Applications (**WAI-ARIA**)
- **EPUB Accessibility** Specification

ACCESSIBILITY STANDARDS

Web Content Accessibility Guidelines (WCAG) POUR Principles:

1. **P**erceivable
2. **O**perable
3. **U**nderstandable
4. **R**obust

https://www.w3.org/TR/WCAG21/

ACCESSIBILITY STANDARDS

Web Accessibility Initiative – Accessible Rich Internet Applications (WAI-ARIA)

https://www.w3.org/TR/wai-aria-1.1/

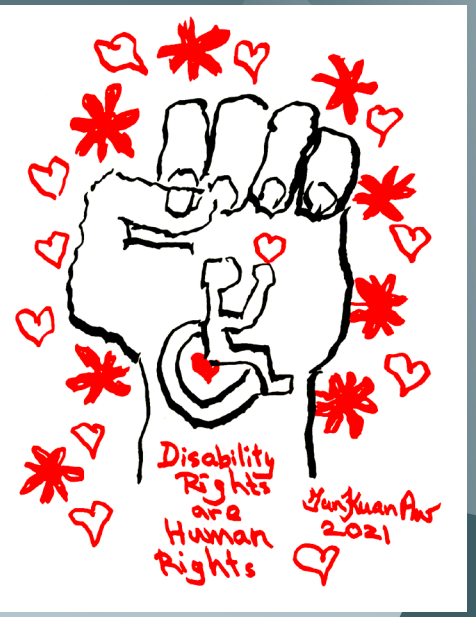
ACCESSIBILITY STANDARDS

EPUB Accessibility Specification:

- ✓ Discoverability requirements & accessibility conformance for EPUB publications
- ✓ Builds on Web Content Accessibility Guidelines (WCAG) to define accessibility conformance for EPUB publications

Accessible Publishing Knowledge Base: Best practices for creating accessible digital publications

http://kb.daisy.org/publishing/docs/

“This the best time in history for disabled persons & ICT.
More ICT accessibility will be mainstreamed.
More disabled persons will live independently & work meaningfully.”

Thanks You All