Towards inclusive education:
The potential of accessible ICT to increase education participation and achievement for persons with disabilities

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Situation for Children with Disabilities

• Over **10 million** of out of school children in Sub-Saharan Africa have a disability (UNESCO, 2013).

• Disabled children have far poorer educational opportunities vs non-disabled peers (GCE, 2013).

• **3 - 7% loss to GDP** is due to the exclusion of persons with disabilities from the labour market (ILO, 2012).

• Only **5 - 15% of enrolled children** have assistive technology / adapted materials (e.g. Braille) (UNICEF, 2013).
Inclusive education

- A key strategy to achieve EFA as well as the equity and inclusion of persons with disabilities.
- Strengthening the education system to reach out to all learners regardless of abilities, social background, language or culture.
- Envisions all children learning together in local schools translating into a just and equal society.
- Personalised / child-centred learning approaches, reasonable accommodations vital for realisation.
UN Convention on the Rights of People with Disabilities (UNCRPD)

- **Article 4** – all new technologies follow a universal design from the outset.
- **Article 9** – include accessibility of ICT early in development & procurement to reduce cost.
- **Article 24** – obligates reasonable accommodations i.e. access to training in and use of accessible ICT, assistive devices and educational material in accessible formats. Also, training & awareness raising in alternative modes of communication.
- **Article 32** – endorses international cooperation on scientific & technical knowledge.
Universal Design

- Design of products, environments and services to be usable by all people (with varying abilities, body shape, age), without the need for adaptation or specialised add-ons which are usually prohibitively expensive.
Vuyo, a teenager with cerebral palsy using a head switch to operate his computer.
Common accessibility issues

- Unavailability of curriculum material in alternative formats (large print, Braille, Audio)
- Lack of section headings
- Poor colour contrast
- An inability to navigate using keyboard only
- Missing text equivalents for images
- Complex graphics and language
- Inability to resize text
- Videos lacking captioning / sign-language
- Copyright
Mobile devices has the greatest potential to increase independent living for people with disabilities, while web-services and devices has immense potential to improve education opportunities at all levels.

Accessible ICT for Education

- **Mainstream technologies**: computers, websites, word processors, whiteboards & mobile phones with in-built accessibility features, tablets, Apps.

- **Assistive Technologies**: hearing aids, screen readers /magnifiers, adaptive keyboards /mouse, augmentative communication devices.

- **Accessible media & formats**: accessible HTML, captioned video, DAISY (Digital Accessible Information System) books.
Universal Design
• Design of products, environments, programmes and services to be usable by all people, without the need for adaptation or specialised additions, which are usually very prohibitively expensive.

School for the Blind in Beira, Mozambique
Accessibility in National Broadband Plans of UNCRPD countries

- Improving ICT Accessibility: Yes (10), No (90)
- Promoting economic & social inclusion via ICT: Yes (10), No (90)
- Both: Yes (0), No (100)
Recommendations: Policies & political will

• Update ICT, disability & education legislation to include accessibility.
• Strengthen research & development of universally accessible technologies & ICT solutions - involve persons with disabilities.
• Include accessibility as a criterion in procurement of all educational software & hardware.
• Allocate appropriate budget (equipment plus training)
• Put in place subsidies / tax breaks / customs waivers.
• Special school / Resource centres should have ICT Development Plans.
Recommendation: Awareness & training

• Promote understanding of disability and diverse learning needs of all learners.
• In- & pre-service teacher training on ICT should incl. making it accessible for students with varying abilities & meet different learning styles.
• How to create accessible digital content.
• Existing accessibility features in computers, tablets & mobile phone.
• Available assistive technology incl. Opensource.
• Mandatory first hand training for end user & co
Recommendations: **Cooperation and copyright**

- Copy and **intellectual property right sharing** to promote accessibility.
- **Accessible Open Education Resources**, flexible copyright & avail e-versions on Gov. websites.
- **Marrakesh Treaty** – permits sharing of published works in accessible formats for visually impaired /print disabled across borders.
Thank you.
Biography

