



Amar Seva Sangam

Assistive Technology Environmental Scan

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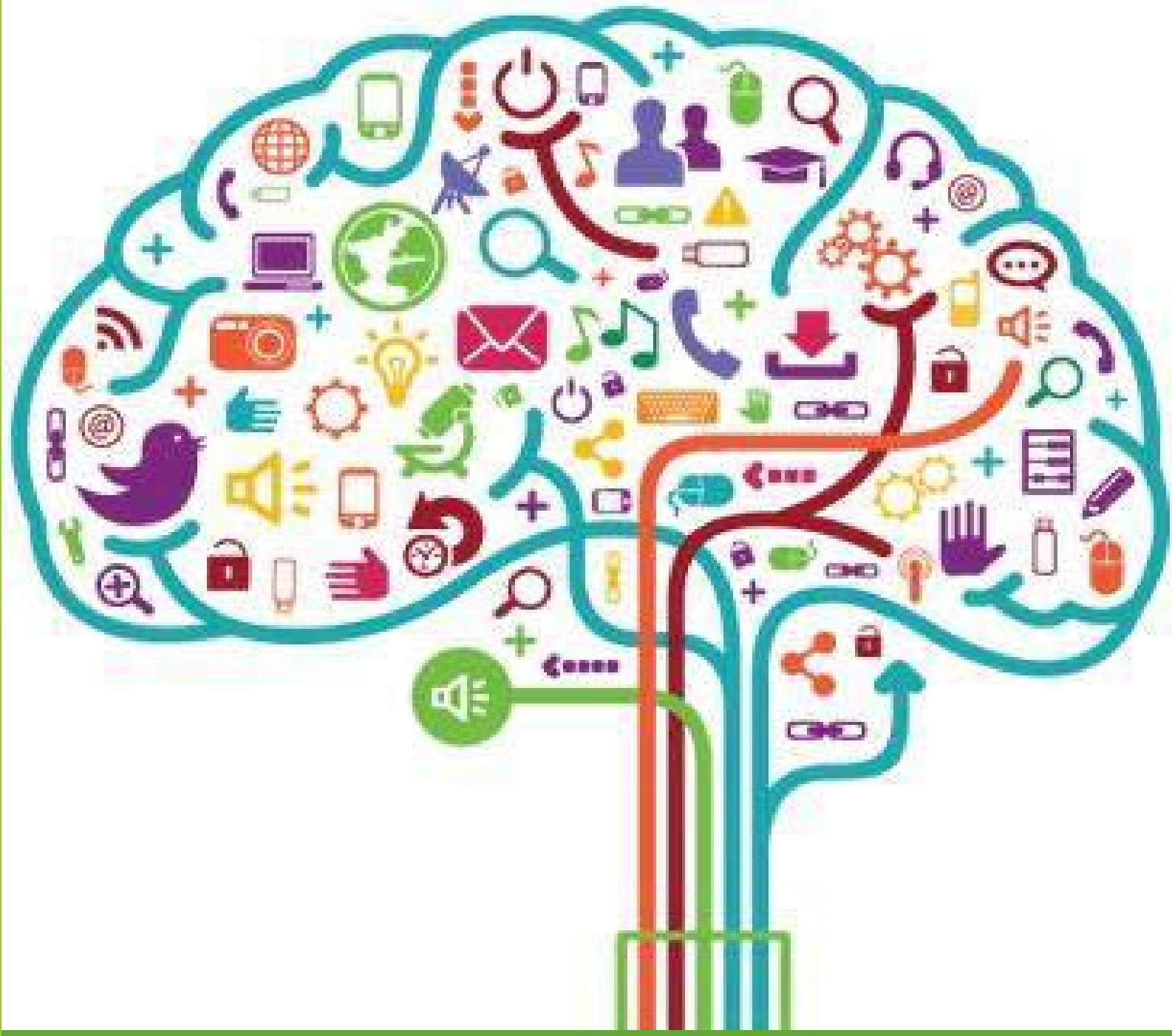
What are Assistive Products and Technology?

According to *The International Classification of Functioning, Disability and Health (ICF)*:

“any product, instrument, equipment or technology adapted or specially designed for **improving the functioning of a person with a disability.**”



Assistive Technology Promotes Child Development in all Areas



Categories of Assistive Technology (AT)

-From UNICEF

Category	Product examples
Mobility	Walking stick, crutch, walking frame, manual and powered wheelchair, tricycle Artificial leg or hand, leg or hand splint, clubfoot brace Corner chair, supportive seat, standing frame Adapted cutlery and cooking utensils, dressing stick, shower seat, toilet seat, toilet frame, feeding robot
Vision	Eyeglasses, magnifier, magnifying software for computer White cane, GPS-based navigation device Braille systems for reading and writing, screen reader for computer, talking book player, audio recorder and player Braille chess, balls that emit sound
Hearing	Headphone, hearing aid Amplified telephone, hearing loop
Communication	Communication cards with texts, communication board with letters, symbols or pictures Electronic communication device with recorded or synthetic speech
Cognition	Task lists, picture schedule and calendar, picture based instructions Timer, manual or automatic reminder, smartphone with adapted task lists, schedules, calendars and audio recorder Adapted toys and games

Services related to Assistive Products

- Referral
- Assessment of the child
- Prescription
- Funding
- Ordering
- Product preparation
- Fitting/ adjusting of the product to the child
- Training of the child or family members
- Follow-up
- Maintenance and repairs
- Adapting, modifying or fitting the product

Overall objectives of the two-part survey

1. Assess the **client needs** for assistive products (AP) at ASSA.
2. Identify the **gaps in AP provision** along with any **barriers and/or facilitators**
3. Review **rehabilitation specialists needs** to enable provision of AP (including assessment, prescription, acquirement, checking the fit, and training).
4. Improve the **support required to enable access to the appropriate and necessary assistive devices and technology** to maximize function and inclusion for children and adults with disabilities receiving rehab services from ASSA

SURVEY #1

- Survey #1 was sent to **67 individuals** and received **62 responses over 12 days**.
- The **aim** was to understand rehab specialist's experience and use of various AT products
- **The specialists were to choose from the following choices, associated with each device image:**
 1. I have prescribed or recommended this device
 2. I have heard of or seen this device, but have **never** prescribed or recommended it
 3. I have **never** seen or heard of this device



Survey #1 Results

Table 1: Survey 1 Demographics

Question	Response Choice	(n)	Percentage
What is your specialization?	Special Educator	25	40.3%
	Speech Trainer or Speech Therapist	11	38.7%
	Physiotherapist	24	17.7%
	Occupational Therapist	2	3.2%
What is your highest level of education in the specialization?	Bachelor's Degree	31	50%
	Diploma	18	29%
	Master's Degree	10	16.1%
	Post Graduate Diploma	3	4.8%
	Certificate	0	0%
	PhD	0	0%

How long have you been graduated from your
highest level of education?

Under 1 year 10 16.1%

1-2 years 20 32.3%

Over 2 years to 5 years 17 27.4%

Over 5 years to 10 years 7 11.3%

Over 10 years 8 12.9%

How many years have you worked at ASSA?

Under 1 year 9 14.1%

1-2 years 14 22.6%

Over 2 years to 5 years 18 29%

Over 5 years to 10 years 10 16.1%

Over 10 years 11 17.7%

Question	Response Choice	(n)	Percentage
How many years have you worked in the disability field?	Under 1 year	6	9.7%
	1-2 years	15	24.2%
	Over 2 years to 5 years	15	24.2%
	Over 5 years to 10 years	12	19.4%
	Over 10 years	14	22.6%
In the past 2 years which programs have you worked with at ASSA?	Early Intervention Centre	10	16.1%
	Spinal Injury Rehab	6	9.7%
	Sangamam Special School	14	22.6%
	Medical Testing Unit – Outpatient MSK	7	11.3%
	Medical Testing Unit – Outpatient Stroke	9	14.5%
	Residential Home Children	7	11.3%
	Village home-based rehab (above 6)	14	22.6%
	Village home-based rehab (below 6)	27	43.5%
	Vocational Training Unit	3	4.8%

Which setting do you primarily work in?

Village-based Rehab

39

62.9%

Institution (at ASSA)

23

37.1%

Village-based rehab only – Which setting do you primarily work in?

Home-based only

28

71.8%

Centre-based only

2

5.1%

Both

9

23.1%

Survey #2

Based on:

- WHO's Priority Assistive Products List (APL)
- UNICEF/WHO Assistive Technology for Children with Disabilities
- National priority assistive product list (APL) development & surveys in low resource countries, including Tajikistan, Nepal, Western Pacific Region.



Survey #2 Guiding Questions

1. What is the service provider's level of knowledge of assistive technology?

- To know the skills developed by using this AP?
- To prescribe the AP?
- To provide training on this AP?
- To assess the functional use of this AP with the client?
- To assess the fit & modify the fit of the AP?
- To provide maintenance on the AP?
- To explain the value of this AP to a family?

Survey #2 Guiding Questions

2. What is the clientele's current use of AT? What are met needs and unmet needs?

- What is presently being used?
- What factors are enablers/ facilitators?
- What is currently working well?
- What could easily be accessed but is not presently being accessed?
- What is being prescribed?
- What do they have training in providing/prescribing?
- What skills do they have to train clients/families on use of AT?

3. What are the barriers and facilitators to device assessment, prescription, acquisition and usage?

Based on the *'Five A's'*

Table 2: Questions in Survey 2

Question*	Possible Responses
<p>Question #1. Approximately, what percentage of service users that you have worked with have needed assistive devices within this group of devices?</p>	<p>A. Does not apply to my practice area B. 0% C. 1-25% D. 26-50% E. 51-75% F. 76-100%</p>
<p>Question #2. Approximately, what percentage of the service users that you have worked with had the assistive devices that they needed within this group of devices?</p>	<p>A. Does not apply to my practice area B. 0% C. 1-25% D. 26-50% E. 51-75% F. 76-100%</p>
<p>Question #3. Approximately, what percentage of the service users that you have worked with did not have the assistive devices that they needed within this group of devices?</p>	<p>A. Does not apply to my practice area B. 0% C. 1-25% D. 26-50% E. 51-75% F. 76-100%</p>
<p>Question #4. Are these assistive devices available for rehab specialists to TRIAL with their clients (click all that apply)?</p>	<p>A. Not applicable to my practice area B. Readily available at ASSA C. Available by placing an order to external source D. Not available E. Have never requested</p>

Question #5.

Choose up to 5 reasons per device category that your clients did not obtain these needed assistive devices

- A. Not applicable to my practice area
- B. Not an issue
- C. Not accepted by the service user due to stigma
- D. Not accepted by the service user due to appearance
- E. Not accepted by the service user's family due to stigma
- F. Not accepted by the service user's family due to appearance
- G. Not affordable for the service user/family
- H. The physical environment is not accessible
- I. Further knowledge required from a rehab specialist on assessment and prescription
- J. The long tedious ordering process
- K. Long waitlist for government-provided and/or expensive assistive devices
- L. Not able to mobilize the service user/families for measurements or difficulties with travel.
- M. Not able to order the device from an external source
- N. Device can't be modified or customized to suit service user's needs
- O. Other

Question #6.

Choose up to 5 suggestions per device category
to improve the use of assistive devices by
service users

- A. Not applicable to my practice area
- B. Doesn't need improving
- C. Client education for the service users and their families
- D. Community education and awareness for the community on AD use, benefits and positive impact for individuals who use them
- E. Adapt the physical environment for AD use
- F. Modify the AD to fit the physical environment
- G. Improving the appearance, comfort or usability of assistive devices.
- H. Availability of funds for the assistive device
- I. Availability to order and obtain assistive device
- J. Training and education for professionals to prescribe, assess or modify the assistive device
- K. Access to device repair facilities.
- L. Other

<p><i>Question #7.</i></p> <p>Please choose up to 3 assistive devices that the clients have most access to</p>	<p>All devices within the profession's categories are listed (see table 3).</p>
<p><i>Question #8.</i></p> <p>Please choose up to 3 assistive devices that are most difficult to access</p>	<p>All devices within the profession's categories are listed (see table 3).</p>
<p><i>Question #9.</i></p> <p>Please choose up to 3 assistive devices that you feel the most knowledgeable in prescribing</p>	<p>All devices within the profession's categories are listed (see table 3).</p>
<p><i>Question #10.</i></p> <p>Please choose up to 3 assistive devices that you feel the least knowledgeable in prescribing and would like further training</p>	<p>All devices within the profession's categories are listed (see table 3).</p>



Assistive Devices

Walking Aids:

Rollators, Walkers, Elbow Crutches, Axilla Crutches





Corner Seat and CP Chair



Standing Frames



Orthoses: AFO



KAFO

Spinal Orthoses





Prostheses: Lower Limb, Upper Limb



Dennis-Browne Boots and Bar (CTEV)

Manual Wheelchair (with or without cushion)





Tricycle-
Hand-
Propelled



Motorized Wheeled Mobility:
Three-Wheeler and Powered Wheelchair



Timer



Glasses, Magnifier Optical, Digital Magnifier



Braille Watch

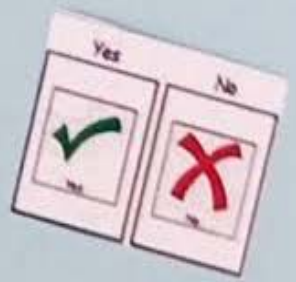


White Cane



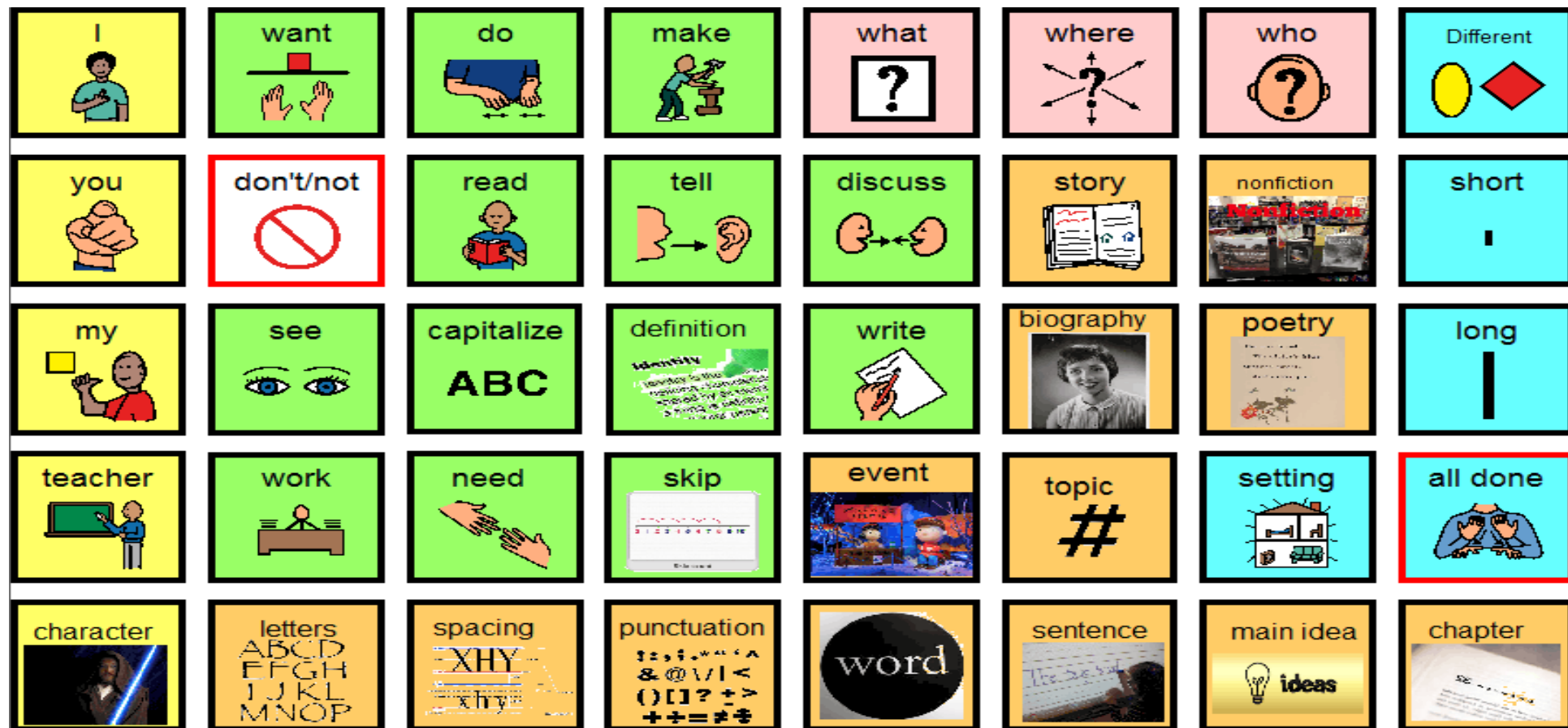
Hearing Aid

AAC





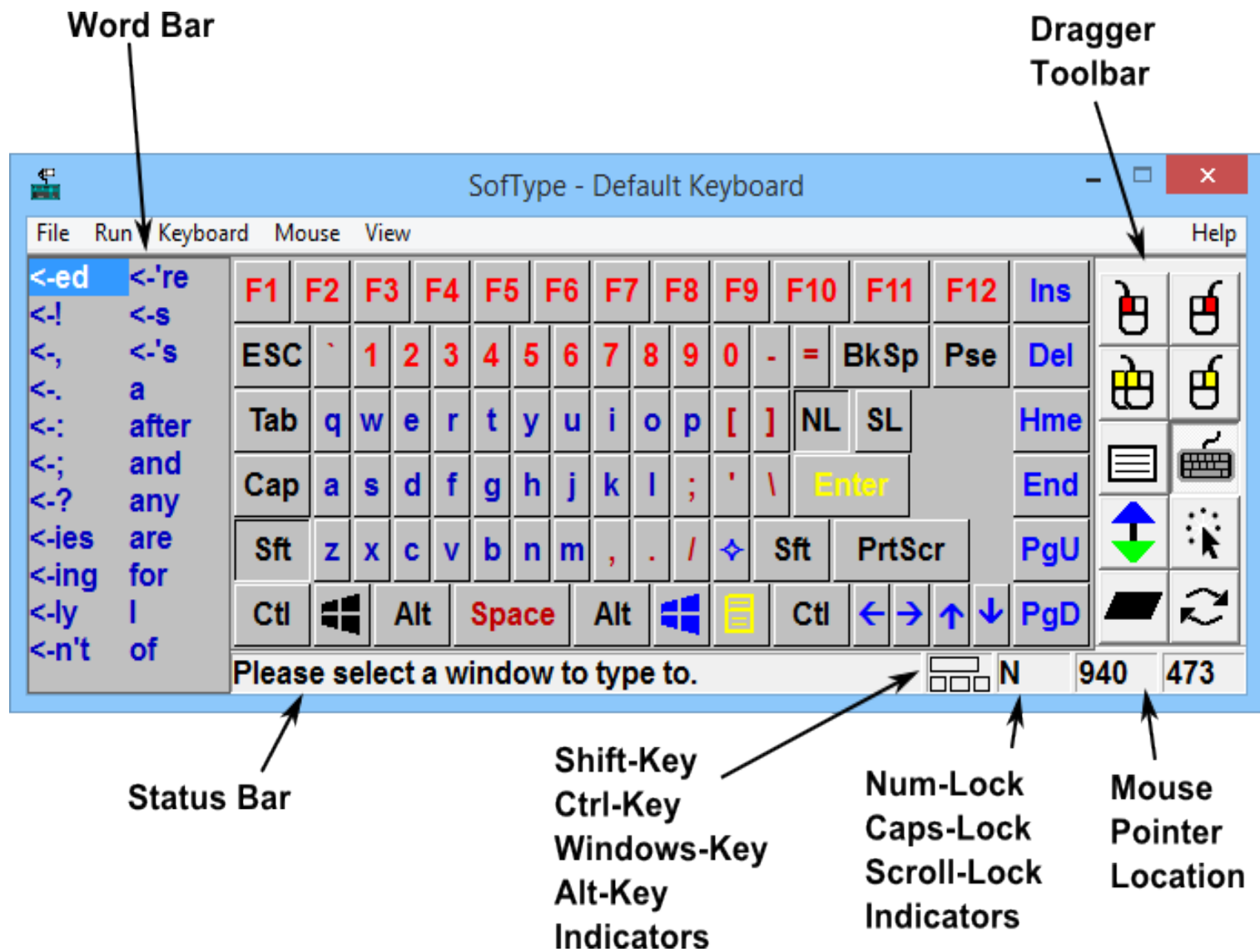




Communication Board



Ipad with
AAC



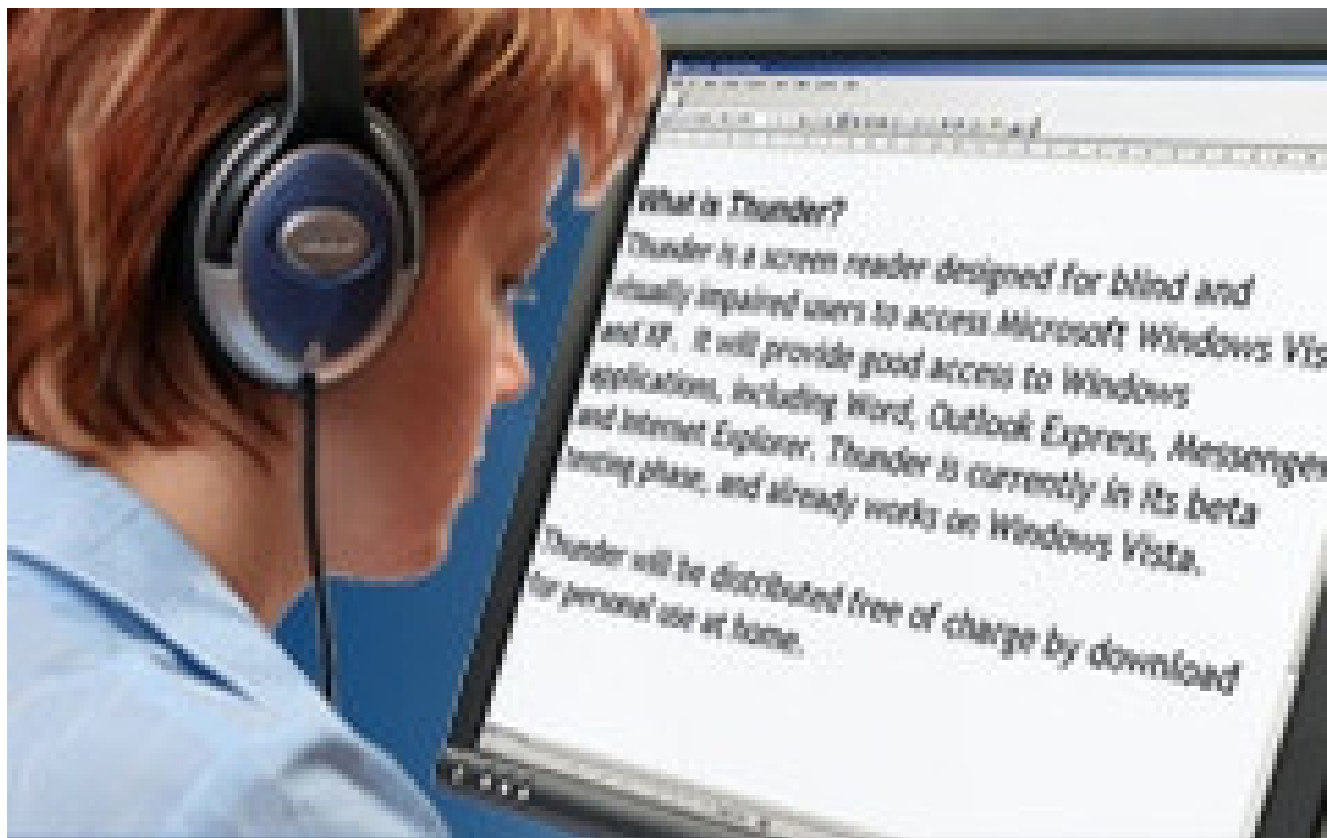
Emulation Software



Audio
Daisy



Recorder



Text-to-Speech



Deaf-Blind Communicator



Accessible Phone



PDA- Personal Digital Assistant

Table 3: Survey Two Device Categories

Device Category	Device(s)
<i>Physiotherapy and Occupational Therapy</i>	
Sitting Postural Aids	Chair for bath/shower/toilet, CP chair (adapted chair) and corner chair
Standing Postural Aids	Standing frames
Wheelchairs	Ordinary manual wheelchair, Manual wheelchair with cushions/other adaptations, Motorized wheelchair, Tilting wheelchair
All Other Mobility Aids	Tricycle, Three wheeler, Axillary crutch, Elbow crutch, Rollator, Paediatric rollator, Walking frame
Orthoses	Lower limb orthoses, Upper limb orthoses, Spinal orthoses
Prostheses	Lower limb prostheses, Upper limb prostheses
Therapeutic Footwear	CTEV and other modified shoes
Transfer Equipment	Sliding board and patient lifts
Environmental Modifications	Portable ramp, Handrails, Grab bars
Personal Living Aids	Incontinence absorbent product, Pressure relief mattress, Universal cuff, Hoyer lift, Mechanical lift, Patient hoist

Speech Trainers and Speech Therapists

Hearing Aids

All types

Communication Devices

Communication book, Communication board, Communication software

Advanced Communication Aids

Gesture to voice technology, Text to voice, Video communication devices

Special Educators

Hearing Aids

All types

Visual Aids

White cane, Braille watch, Spectacles/low vision aids, Magnifiers (digital and optical)

Communication Devices

Communication book, Communication board, Communication software

Advanced Communication and Learning Aids

Mouse emulation software, Recorders, Screen readers, Text to voice, Time management products, Video communication devices

Simple Mobile Devices

Simple mobile phone, Personal digital assistant

The 5 As' of Assistive Technology

- Available
- Accessible
- Affordable
- Adaptable
- Acceptable

Quality is a 6th element



Table 4: Groupings of Barrier and Facilitator Categories

Barrier Question(s)	Facilitator Question(s)
<i>Acceptability</i>	
<i>“The assistive technology and related services are appropriate, useful and helpful in the lives of those who need them, involve family in the provision process, and take needs/preferences/expectations into account” (Borg et al., 2015)</i>	
<ul style="list-style-type: none"> -Not accepted by service user due to appearance -Not accepted by service user due to stigma -Not accepted by the service user’s family due to stigma -Not accepted by the service user’s family due to appearance 	<ul style="list-style-type: none"> -Improving appearance, comfort or usability of AD

Table 4: Groupings of Barrier and Facilitator Categories

Barrier Question(s)	Facilitator Question(s)
<i>Accessibility</i>	
<i>“Those who need assistive technology services know about them and are able to get them, physical and cognitive access to services and information” (Borg et al., 2015)</i>	
<ul style="list-style-type: none">-Not able to mobilize the service user/family for measurements or difficulties with travel-Further knowledge required from a rehab specialist on assessment and prescription	<ul style="list-style-type: none">-Client education for the service users and their families-Community education and awareness on AD use, benefits, and positive impacts for those who use them-Training and education for professionals to prescribe/assess/modify AD

Table 4: Groupings of Barrier and Facilitator Categories

Barrier Question(s)	Facilitator Question(s)
<i>Adaptability</i>	
<i>“Adapted and modified to ensure they are appropriate to the needs and requirements of individual children, individual factors as well as environment factors (can accommodate physical changes of the children as they grow and develop), sufficiently adjustable to meet each individual’s needs” (Borg et al., 2015)</i>	
-The physical environment is not accessible - Device can’t be modified/customized to suit service user’s needs	-Adapt the physical environment for AD use -Modify the AD to fit the physical environment
<i>Affordability</i>	
<i>“Assistive technologies are available at a cost the user and their family can afford” (Borg et al., 2015)</i>	
-Not affordable for service user/family	-Availability of funds for the AD

Table 4: Groupings of Barrier and Facilitator Categories

Barrier Question(s)	Facilitator Question(s)
<i>Availability</i>	
<i>“Assistive technologies are available in sufficient quantity for those in need and are provided close to their communities” (Borg et al., 2015)</i>	
<ul style="list-style-type: none"> -The long, tedious ordering process -Long waitlist for government-provided and/or expensive devices -Not able to order the device from an external source 	<ul style="list-style-type: none"> -Availability to order and obtain the AD -Access to device repair facilities



Survey #2 Results

Common Themes

Acceptability, affordability and availability were the most common 'As' reported by the rehab specialists across the device categories.

The most common barriers across all sections included:

- *'not accepted by the service user and/or family due to stigma and/or appearance'* (acceptability)
- *'not affordable for service user/family'* (affordability)
- *'long waitlist for government-provided and/or expensive devices'* (availability)

The most common facilitators across all sections included:

- *'community education and awareness'* (accessibility/acceptability)
- *'client education for the service users and their families'* (accessibility/acceptability)
- *'training and education for professionals to prescribe/assess/modify AD'*. (accessibility)
- *'availability of funds for the AD'* (affordability)

Manager Survey Results



Question #3. *What are the reasons for not being able to give assistive devices for the clients who have requested?*

Availability of technology (75%)

Availability of human resources (50%)

Inappropriate prescription of devices for service user needs (50%)

Top Devices That Clients Have Access To	Top Devices that are Most Difficult to Access	Top Devices that Therapists Feel Most Knowledgeable in Prescribing	Top Devices that Therapists Feel Least Knowledgeable in Prescribing
<i>Physiotherapy</i>			
Walking Frames (56%) Lower Limb Orthoses (44%) Cerebral Palsy Chair (38%)	Manual Wheelchair - Ordinary (44%) Paediatric Rollator (31%) Cerebral Palsy Chair (31%)	Walking Frames (44%) Lower Limb Orthoses (38%) Standing Frames (38%)	Incontinence Products (50%) Motorized Wheelchair (25%)

Top Devices That Clients Have Access To	Top Devices that are Most Difficult to Access	Top Devices that Therapists Feel Most Knowledgeable in Prescribing	Top Devices that Therapists Feel Least Knowledgeable in Prescribing
<i>Special Educators</i>			
<p>Communication Boards/ Books (75%)</p> <p>Hearing Aids (68%)</p> <p>Simple Mobile Phone (46%)</p>	<p>Laptop with Daisy (39%)</p> <p>Screen Readers/ Text to Voice (32%)</p> <p>Mouse Emulation Software (29%)</p>	<p>Communication Books/ Boards (61%)</p> <p>Communication Software (57%)</p> <p>Hearing Aids (64%)</p>	<p>Communication Software (43%)</p> <p>Mouse Emulation Software (43%)</p> <p>Personal Digital Assistant (32%)</p> <p>Screen Readers/ Text to Voice (32%)</p>

Top Devices That Clients Have Access To	Top Devices that are Most Difficult to Access	Top Devices that Therapists Feel Most Knowledgeable in Prescribing	Top Devices that Therapists Feel Least Knowledgeable in Prescribing
<i>Speech Trainers and Speech Therapists</i>			
<p>Communication Boards and Books (100%)</p> <p>Hearing Aids (64%)</p> <p>Gesture to Voice Technology (64%)</p>	<p>Personal Digital Assistant (79%)</p> <p>Simplified Mobile Phone (71%)</p> <p>Text to Voice Technology (71%)</p>	<p>Communication Boards and Books (100%)</p> <p>Hearing Aids (64%)</p> <p>Gesture to Voice Technology (64%)</p>	<p>Text to Voice Technology (86%)</p> <p>Personal Digital Assistant (71%)</p> <p>Simplified Mobile Phone (64%)</p>

Top Devices That Clients Have Access To	Top Devices that are Most Difficult to Access	Top Devices that Therapists Feel Most Knowledgeable in Prescribing	Top Devices that Therapists Feel Least Knowledgeable in Prescribing
<i>Rehabilitation Managers</i>			
Sliding Board (50%) Elbow Crutch (50%) Walking Frame (50%) Shoes for clubfoot (50%) Therapeutic Footwear (50%) Universal Cuff (50%)	Motorized Wheelchair (75%) Tilting Wheelchair (50%) Gesture to Voice Technology (50%)	Pressure Relief Mattress (75%) Sliding Board (75%) Shoes for clubfoot (75%)	Incontinence Products (50%) Lower Limb Orthoses (50%) Spinal Orthoses (50%) Laptop with DAISY (50%) Mouse Emulation Software (50%) Gesture to Voice Technology (50%)

NEXT STEPS...

1. **Focus groups and interviews with the rehabilitation specialists-** to better understand the barriers and facilitators influencing the AT prescription and use at ASSA
2. **Create information documents** (electronic or hard copy) with resources for rehab specialists AT, vendors, forms, family information
3. **Capacity building sessions for existing staff and new rehab specialists** to train on proper prescription, provision, fitting, adaptations and custom-fitting techniques, educating family, repairs...



Addressing Barriers and Facilitators...

Most common barriers :

- *not accepted by the service user and/or family due to stigma and/or appearance*
- *not affordable for service user/family*
- *long waitlist for government-provided and/or expensive devices*

Most common facilitators:

- *community education and awareness*
- *client education for the service users and their families*
- *training and education for professionals to prescribe/assess/modify AD*
- *availability of funds for the AD*





Use of Assistive devices by Service users

Follow up work after the AT study

Navamani V

Amar Seva Sangam, Ayikudy

- Staff capacity building
- Referral of children for assistive devices
- Fund raising by Boniface Handi-Care Equipment Provision Program
- Identification of supplier
- Assistive devices measurement camp

Staff capacity building

- Introduction: Importance and the various types of assistive devices
- Discussion on postural devices, mobility devices and calipers - Indication, measurement etc
- Position and postural device - 2 sessions by Kirsti and Wendy

Referral of children to get assistive devices

- After the introductory training - specialists identified the assistive devices needs among their follow up children.
- Received request for various assistive devices for 182 children in EI and 111 children in Above 6 program
- Priority list prepared

- Funding support by Boniface Handi-Care Equipment Provision Program
- Direct fund raising by Handi-Care International to cover the needs of all children

Identification of supplier

- Due to COVID lock down - limitation in getting raw materials for various assistive devices.
- Identified a supplier that can supply all type of mobility, postural devices and calipers all customized for users.

Measurement Camp

- Conducted measurement camps at 5 places on various days in Sept. 2020
- About 73 children were assessed and final assistive devices suggested.
- In these camps, therapists had practical training on choosing appropriate assistive devices, measurement etc.

- Assistive devices for 73 children will be distributed in the fourth week of Nov. 2020
- In December, the assessments and measurements will be taken for the rest of the children

- In TTS 3 training - one session on Assistive devices general for all specialists.
- One session for PTS on mobility and postural devices