

Alternative and augmentative communication (AAC)

About this guide

This guide gives explores the use of Communication Technology or Alternative and Augmentative Communication for children with severe visual impairment and complex needs. Written by Caroline Knight, Speech and Language Therapist, this guide looks at how technological devices can be used to help children learn and communicate to express their choices.

It is part of our **Complex Needs** series. At the end you will find the full series listed, and details of where to find them.

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1. Communication Technology

Technological devices can help children learn to communicate and express choices. This is also sometimes referred to as **Alternative and Augmentative Communication (AAC)**.

For children with a visual impairment and multiple disabilities (MDVI), the path to effective communication can be very long and difficult to negotiate. The outcomes rely on the quality of the interactions of their caregivers, their environment and the opportunities that they are given.

2. Total Communication

Children with MDVI can benefit from a Total Communication environment, where a variety of means of communication is available to them. With perseverance, understanding can be developed and the communication of basic wants and needs can be established through a variety of channels.

Children with a visual impairment can perceive the world to be fragmented and chaotic. But technology can provide a constant and consistent route to communication. Technology can enable the child to experience control over their environment; it can facilitate interaction; it can present the child with a means to become an active communicator; and it can provide opportunities to communicate with a wider world.

3. Developing switching skills

If our ultimate goal is to enable a child to use technology to enhance their expressive communication, then we must first consider how the child will gain access to the devices. Typically this is via a switch.

To ensure that the switch is used meaningfully, we need to ascertain the most accurate repeatable body movement - with the least amount of effort - which the child can produce. This will determine what type of switch should be used. This can be found by careful observation of how the child moves and interacts with objects and providing lots of opportunities to practice and refine skills.

4. Factors in choosing a switch

How the switch is activated

Types of switch include:

- simple press switches such as a Jelly Bean or Buddy Button
- flat pad switches which require only a slight touch such as a Pal Pad or Wolfson Touch Switch
- a String Switch which can be activated by the pull of the string loop such as by raising an arm

- a Wobble Switch which can be operated by a gross movement of an arm or leg - no precision needed
- a Tilt Switch which can be attached to the body and reacts to very small movements
- a tactile overlay on an alternative keyboard such as Intellikeys.

Note that the child's most consistent movement may not be fingers: children may use, amongst other possibilities, their fist, back of hand, back of head, side of head, wrist, foot or knee. It is generally agreed that it is easier for a child to understand they are in control via the switch if they are able to have direct contact with it.

Size of the switch

This will depend on how it will be activated and the accuracy of child's movement.

Positioning of the switch

- Consult the child's Occupational Therapist to ensure that good movement patterns are established.
- Be consistent so that child does not have to search to locate the switch each time.
- Have the switch available for prolonged periods, not just when the adult wants to draw attention to it. The child should purposefully select to use the switch to achieve an end, and not because it has suddenly been presented to him. The use of a mounting arm can lock the switch securely into the required position.
- Consider using a wireless switch such as the Jelly Beamer so that there is less to distract the child or for the child to get caught up in.
- Consider mounting the switch on the child, for example with a Velcro band around their leg, so that the child is aware of the position.

Differentiation of the switch

- To help the child distinguish the switch from the rest of their environment, use switch caps to introduce texture or a contrasting colour or reflective surface.

- Use different switch covers to help the child distinguish the different rewards. Or place the different switches in consistent locations.

Supporting switching

Switching can be cued with verbal prompts such "one, two, press" (and then faded as the child anticipates and takes control).

Rewards

Provide rewards or outcomes that are motivating to the child and will have a clear impact on the child, such as a change to their immediate environment.

Switches using devices such as Battery Switch Adapters and the AbleNet PowerLink can control both battery and electrical toys and appliances. These can increase the range of rewards that can be offered. The following could be considered:

- cool fan (perhaps with streamers added)
- warm hairdryer
- massager
- vibrating cushion
- foot spa
- recordings of novel music or sounds (you could use a site like FindSounds for this)
- lights
- bubble tube
- computer - patterns on screen, animation.

Presenting switches will help develop and consolidate the child's understanding of cause and effect. The child becomes active in their environment and experiences the power of taking control. These abilities can be developed through individual exploration and through play with an adult. The skills that are learned and practiced, such as maintaining attention, anticipation and turn taking, can be transferred to other areas of the child's communication.

5. Single message devices

Individuals who can use switches purposefully and demonstrate a need and desire to communicate may benefit from using a Voice Output Communication Aid (VOCA). Liaise with the child's Speech and Language Therapist to determine the complexity of language that is appropriate, eg single words, short phrases or sentences. Using a single message VOCA, eg the BIGmack, lets the child build a link between the message and its effect on the communication partner. In a busy schedule, the adult usually records the message at the start of the activity. Ideally, the messages should be recorded by a consistent person - where possible of the same age and sex as the child, but not known to them.

Adults should also use the VOCA to model how to use it appropriately, so the child has experience of hearing a VOCA in familiar communication exchanges. For example, class staff could use a VOCA as they greet students and each other in the morning circle.

Example messages

Messages may be sounds, single words or short phrases. Initially the child should begin with the switch in a non-time-dependent context, ie when there is no pressure to use it within any framework set by the adult.

Examples may include:

- "Hello" - as a general way to gain someone's attention
- "Let's talk" - to initiate an interaction
- "Go away!" - to clear the room person by person
- "Woof woof" - to provide sound effects in a story about a dog.

Adults should reinforce the use of the message by responding as if the child had spoken the message.

Time dependent messages

Once the child is using the message with meaning and shows an awareness of the message as a communication to others, then opportunities that are time dependent can be used.

These may include:

- responding to a greeting in circle time
- a train whistle - to sound whilst the train runs around the track,

- jingling bells or a crashing cymbal to use during a music session
- saying "Ready, steady, go" to start a game or a song
- saying "Knock it down!" to topple a tower of bricks
- asking for "more" at snack time
- providing a repeated line in a song or story.

6. Sequencing devices

Some VOCAs, eg the Step by Step, can offer a sequence of messages which can give more possibilities for the child to participate. The child cannot determine the order of the messages but can control the timing of their delivery.

These can be used in a variety of ways to provide motivating communicative experiences for the child:

- songs can be played one line at a time
- a list of animals can be recorded to be used at the appropriate time when "Old Macdonald" is being sung
- children's names can be listed and supplied to the teacher when a 'volunteer' is needed
- a list of commands can be given for a simplified game of Simon Says - "clap your hands", "everybody whistle", etc
- a shopping list can be accessed when in the supermarket
- a sequence of commands will allow the child to prompt himself during an independent activity.

7. Making choices: auditory scanning

If the child is unable to access the communication aid physically, other means can be investigated. It is common practice to give spoken alternatives in order to elicit a response from a child: for example, "Do you want yoghurt, banana or custard?" In doing this we are using a form of auditory scanning.

Technology can replicate and extend this technique by giving the child a sequence of prompt words or phrases. In its simplest form, the child activates a switch on hearing the required response, and the word or phrase is repeated.

A greater number of choices can be made available to the child by "branching" - using categories that can lead the child to navigate through multiple layers of vocabulary. For example, the child may be prompted with "People, Food, Play". If he responds to "People" he may then be given the choice of "Mum, Dad, Brother, Friend" etc.

Glennen & Decoste state: "Auditory scanning has elements of motor and auditory discrimination skills and is cognitively demanding".

To be successful with this type of system, the user needs to be able to:

- listen and pay attention
- understand the concept of cause and effect
- listen and activate after a targeted message
- master one consistent motor movement
- demonstrate good comprehension skills
- retain and recall.

If the child is able to cope with this, auditory scanning can offer an effective means of communication. However, for many MDVI children, the challenges of this form of communication prove to be too great.

8. Making choices: direct access

By giving auditory feedback and reinforcement, VOCAs offer a good way to facilitate choice making. The child can be facilitated to move on from using a single-message VOCA to having a choice of two.

Initially it can be helpful if one of the choices results in a motivating outcome and the other is more neutral. (This tactic can sometimes lead to the child being able to demonstrate previously unknown preferences, such as a young child who consistently played Gregorian chant rather than the adults' presumed favourite of a lively pop hit!)

Simple VOCAs that offer two, four or even eight message cells could also be introduced gradually. Remember that just because the device has four cells, you do not have to fill them all. Leaving some blank spaces may help the child locate those that are in use.

As with the switches mentioned above, the cells need to be differentiated so that the child can find the desired message. Different meanings could be denoted by the use of tactile markers, eg textures, miniature objects, parts of known objects or blocks of colour, clear photographs or colour. These could be attached directly onto the switch or cell, or onto an overlay, depending on the device in use.

Where multiple choices are available, a key guard can often assist the child in finding the required message without activating unwanted messages.

9. Further guides

The full **Complex Needs** series of guides includes:

- Special Schools and Colleges in the UK

Assessment

- Functional Hearing Assessment
- Functional Vision Assessment

Communication

- Becoming a sensitive communication partner
- Promoting communication with children with complex needs
- Alternative & Augmentative Communication (AAC)
- Using Touch with children with complex needs
- Objects of reference

In the classroom

- Developing Play
- Creative and Musical sessions for children with complex needs
- Sensory Stories
- Information Communication Technology (ICT) for children with complex needs
- Multi-sensory Learning Environments

The staff Team

- The role of the Intervenor

- The role of the QTVI and other professionals:
 - 1) Best of Both: Visual impairment and Physiotherapy
 - 2) Best of Both: Visual impairment and Occupational therapy
 - 3) Best of Both: Visual impairment and Speech and language Therapy
 - 4) Best of Both: Visual impairment and Specific medical needs and medication
 - 5) Best of Both: Visual impairment and orthoptics (clinical and functional vision assessment)

Understanding complex needs

- Attachment, development and children with sensory needs
- Sensory Integration

In addition, you may also be interested in the following series of guides, all of which are relevant to children, young people and families:

- Supporting Early Years Education series
- Removing barriers to learning series
- Teaching National Curriculum Subjects series
- Complex needs series
- Further and Higher education series

We also produce a number of stand-alone guides, on a range of topics, which may be of interest, please contact us to find out what we have available.

All these guides can be found in electronic form at www.rnib.org.uk/guidanceonteaching For print, braille, large print or audio, please contact the RNIB Children, Young people and Families (CYPF) Team at cypf@rnib.org.uk or call on 0121 665 4235.

For further information about RNIB

Royal National Institute of Blind People (RNIB), and its associate charity Action for Blind People, provide a range of services to

support children with visual impairment, their families and the professionals who work with them.

RNIB Helpline can refer you to specialists for further advice and guidance relating to your situation. RNIB Helpline can also help you by providing information and advice on a range of topics, such as eye health, the latest products, leisure opportunities, benefits advice and emotional support.

Call the Helpline team on 0303 123 9999 or email helpline@rnib.org.uk

If you would like regular information to help your work with children who have sight problems, why not [subscribe to "Insight"](#), RNIB's magazine for all who live or work with children and young people with sight problems.

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