



Using visual tools to support classroom communication and learning

Helen Wheatley

When a child starts school the demands upon their speech and language skills increase greatly. They must now apply these skills to understand instructions, sort through information and to interact socially. Most children with Down syndrome have some level of speech and language difficulty which make being in the classroom or the playground a challenging experience. Using real objects or visual symbols, that is photos or pictures, assists the child to cope with the increasingly complicated process of trying to communicate effectively and integrate into the school environment.

Visual supports and spoken communication

Visual supports can assist both a child who is struggling to understand speech and language and also the adults interacting with the child. The benefits of visual supports include:

- Providing more usable information. The child can see the message as well as hearing it.
- Compensating for difficulties with short term auditory memory (also called working memory) associated with Down syndrome by utilising the stronger visual memory. Although most children with Down syndrome have a good memory for the things they have seen (visual memory) or experienced (episodic memory) their ability to hold a spoken message in working memory is often impaired. This means they have trouble remembering all the words in a sentence and struggle to make sense of what they have heard. For further information about short-term auditory memory see Sandy Alton's article and the Down Syndrome Education International publication, referenced below.
- Providing static information. Verbal messages disappear as soon as the words are spoken. Using a visual symbol means part of the message remains for longer. The child then has time to process what was said (this is sometimes referred to as a 'delay time').
- Providing concrete information. Words are abstract. Visual supports provide concrete information and help give meaning to the words.
- Providing a link between the knowledge the child has about the world and the words they are hearing.
- Simplifying the message by breaking it into manageable units. The child is prompted to concentrate on the important parts of the message.
- Creating a link between the verbal information and the visual information that the child receives. With repetition their understanding of the spoken message increases.
- Providing a link between known words and unfamiliar words increasing the child's receptive vocabulary (eg shut the door/close the door).
- Making the speaker aware of the message they are delivering.



Visual supports in the classroom

For a child with Down syndrome the use of visual supports in the classroom facilitates their inclusion and fosters their independence and self esteem. Using visual supports:

- Helps the child get organised to listen. Successful communication involves using many social communication skills, such as attending to the person who is speaking, making eye contact and holding still while someone is talking. Using a visual provides the child with a focus and lets them know that a message is coming and they should listen.
- Helps the child to predict what will happen next. When children cannot predict what is going to happen they may make mistakes, become bored or become non-compliant – all of which may be expressed as inappropriate behaviour.
- Builds independence during classroom activities. The child can use the visual sequences to follow classroom routines and complete activities with minimal prompting from adults.
- Provide consistency of meaning when a range of different terms are used for a single concept, eg subtraction may be referred to as 'take away', 'minus', 'less than' or '3 from 8'. The use of the visual symbol which depicts the concept provides consistency for the child regardless of the term that is used.

Introducing visual supports

When introducing visual supports for the first time, consider these points:

- Does everyone understand why the visual supports are being used? A meeting with parents, teachers and teaching assistants can help everyone to understand, value and use the system.
- Is the type of visual support to be used suitable for the particular child? In general, photos or pictures will be used to create the visual symbols, but some children need real objects to be used in the initial stage.
- The child may need time to adjust to the new system. This is because it is new, not because it is not working. Allow time and start with just a few visual tools. Use them consistently in the classroom, the playground and at home.
- The initial visual tools used need to be motivating for the child. Start with an activity that the child wants to do (eg computer time) rather than a task you want them to do (eg toilet time).

Developing visual resources

To develop visual resources you need to obtain suitable images, decide on a means to protect the visual symbol materials (from everyday wear and tear), and decide how the materials will be presented for use.

Obtaining suitable visual images

Images and pictures to create visual symbols can be obtained from various sources:

- Commercial pictograph software programs - There are software programs which contain a library of pictures/images/symbols which can be printed and laminated to create visual tools. Some programs allow the user to manipulate the images to create new or unique visual symbols as they are needed. A commonly used example is Boardmaker.
- Downloadable visual images - There are many web-based sources of images, available free of charge. Google Images can be a good source; others are listed at the end of this article. The visual symbols used in this article are available free of charge from the *Visual Aids for Learning* website.
- Self-created images - Visual tools can be created using photos, pictures from magazines, images from the internet or hand drawn pictures. It is important to ensure that the focus of the image is the object the visual symbol is to represent eg if the visual is to indicate grandma, only grandma should be in the picture and preferably a head and shoulder shot only. The background should be plain. 'Busy' images may cause distraction and confusion. Invest in a digital camera and a laminator (or a roll of transparent self-adhesive plastic. This allows the visual tools to be personalised. Photos of the child or their personal belongings can be incorporated into the resource. The camera is invaluable when compiling social scripts (personalised stories for a particular situation or event).

Helen's detailed instructions for the preparation, protection and storage of visual tools for school use are available from the DS NSW website:

www.dsansw.org.au/downloads/Making_visual_tools.pdf

or phone or email DSV or DS NSW for a copy to be mailed out.

Some practical examples of visual tools for school use

1. Lanyards and key rings

Lanyards and key rings provide a convenient way for a teacher or child to carry a group of visual images which are needed frequently or needed outside the classroom.

- Select the visual images needed for a particular situation or activity.
- Punch a hole in the top left corner of each card and place on a key ring.
- Attach the key ring to a lanyard



2. Finished box or envelope

This can help children to focus on the task or activity to be completed and to understand the steps or sequence in an activity. The child removes the visual symbol from the backing board and places it in a 'Finished' box or envelope when they have completed a step or activity.

3. Classroom routine cards on a key ring

A set of cards can be used to support the child to remember and adhere to classroom routines.

- Break the routine into steps and choose the appropriate visual symbols eg 'pack away'; 'sit on the mat'; 'sit quietly'.
- Create a sequence of the visual symbols on laminated card.
- Punch a hole in the top left corner of each sequence and attach to a key ring.



4. Desk set

A desk set is four or five images which the child will use to support classroom participation throughout the day, eg a 'my turn' card, a 'help' card and a 'finished' card. These visual symbols may be attached to a small backing board fixed to the child's desk. The child is encouraged to hold up the cards rather than leaving their seat or calling out when they need attention.

5. Individual visual timetables

Time tables show the school routine and allow the child to predict what will happen in their day. A template for creating your own visual timetable can be downloaded from the Down's Syndrome Association (UK) at

www.supportdisc.co.uk/Visual_timetable.htm

You can also create your own simple timetable: Draw a 2-column grid on a backing board. The left-hand column of the grid divides the day into sessions, eg morning, recess, mid-morning, lunch, afternoon. Visual symbols indicating the day's activities are placed in the right-hand column.

6. Classroom instructions

Encourage the child to listen to a whole class instruction and use a visual symbol sequence to reinforce this

- Choose the visual symbols that break the activity into steps and create a sequence.
- While holding the visual sequence give the instruction to the whole class.
- Point to each visual symbol to indicate each step in the sequence.
- Leave the visual sequence on the child's desk to provide a visual reminder of the instructions.
- Occasionally return to the child's desk and ask the child to indicate where they are up to in the sequence.
- Completed steps can be removed from the sequence and placed in the 'Finished' box.



7. Do this-then-this sequence

This two part sequence assists the child to complete a less favoured activity in order to be able to do a preferred activity.

- Make a small backing board with an arrow in the centre and a Velcro dot on either side of the arrow.
- The visual symbol for the less favoured activity is placed on the left hand dot and the visual symbol for the preferred activity is on the right hand dot.
- Use the sequence to remind and prompt the child to complete the first activity before they move onto the second activity.



8. Visual cue cards for transitions

Children with Down syndrome sometimes have difficulties transitioning from one activity to another. This may be because they are enjoying an activity, because they have not finished their work, or because they are uncertain as to what will happen next. Using a visual cue card to pre-warn the child that a transition is about to occur gives the child time to finish (mentally and physically) what they are doing and to anticipate the next activity.

- There are three visual symbols in this sequence, one indicating the current activity, a finished symbol and a visual symbol for the next activity.
- Use the visual cue card to alert the child that a transition is soon to occur.

- The child is given a few minutes to conclude the current activity.
- When prompted, the child removes the visual symbol for the first activity and places it in the 'Finished' box, then moves to the next activity.



9. Coping with unexpected events and cancellations

Some children with Down syndrome may not find it easy to cope with changes to their daily program or the occurrence of unexpected events such as their teacher being away. Incorporating a 'change' or 'surprise' visual symbol into the child's program on a regular basis helps build their ability to tolerate change. You can then place a 'change' visual symbol over the activity which has been altered eg place the wet weather visual over the sport visual on the child's individual timetable.



Visual tools can support communication and learning in many different ways in the classroom and at home. Wherever possible a visual component should be built into all learning – both for children and adults with Down syndrome. For more ideas and suggestions about how to do this, a list of further reading is included below.

Further reading

Sandy Alton, 2006 *Short-term auditory memory Information sheet*, DSA UK Education Consortium
www.downs-syndrome.org.uk/resources/publications/education.html

Sue Buckley and Gillian Bird, 2001 *Memory development for individuals with Down syndrome – an overview*, Down Syndrome Education International. Available at
www.down-syndrome.org/information/memory/overview/

Patti McVay, Heidi Wilson and Luci Chiotti, 2003 *"I see what you mean!" Part 1, Using visual supports to support student learning*. Disability Solutions, volume 5, issue 4

Patti McVay, Heidi Wilson and Luci Chiotti, 2003, *"I see what you mean!" Part 2, Examples of visual tools to promote inclusive learning*. Disability Solutions volume 5, issue 5

Both articles are available at:
www.disabilitysolutions.org

Linda A Hodgson, 1995, *Visual strategies for improving communication: Practical supports for school and home*, Quirke Roberts Publishing, Available as a book or as a set of DVDs.

 VIC  NSW



www.usevisualstrategies.com/index.html

Kimberley Voss, 2005, *Teaching by design*, Woodbine House.

Lots of practical ideas for using your computer to make visual learning materials.

 VIC  NSW

Dolly Bhargava, *Getting started! Using visual systems to promote communication*

Reinforces many of the ideas in this article with lots of helpful illustrations and a very good accompanying short DVD showing how to use the visual symbols.  VIC  NSW

Both the publication and the DVD are available at
www.carsonst.wa.edu.au

Resources:

Visual Aids for Learning – image sets developed by the parents of a young child with Down syndrome, provide visual symbols suitable for use in the classroom and to support many everyday activities. The sequence packs provide a comprehensive series of visual tools which support particular situations such as toileting, class routines, getting a hair cut and menstruation routines. Images are available for free download from:
www.visualaidsforlearning.com

BoardMaker - picture communication symbols (PCS) database. Widely used picture symbols.
www.mayer-johnson.com

Integrated Treatment Services Includes many picture symbols and suggestions for their use, available to download at:
www.integratedtreatments.co.uk/resources

Colourful Semantics – a systematic visual strategy, developed by Alison Bryan in the UK, to support language development using colour coding for parts of the sentence. An overview of this tool is available at
www.integratedtreatments.co.uk/resources/category/15/colourful-semantic

Helen Wheatley is the mother of a large family that includes Michael, 22, who has Down syndrome. Helen has recently retired from her career as a speech and language pathologist, working with children and adults with Down syndrome and other conditions associated with language and hearing impairment. She lives in Newcastle, NSW.

Preparation, protection and storage of visual support tools for school use

Appendix to the article *Using visual tools to support classroom communication and learning*, by Helen Wheatley, ***Voice***, Vol. 1, Issue 1, March 2010

Protecting visual tools

Images need to be laminated or covered with self-adhesive plastic film to protect them.

Images printed on plain paper and then laminated are quite durable.

Images covered in self-adhesive plastic film need to be pasted on cardboard before they are covered to increase their strength.

Securing the visual symbols when in use

Magnets are useful for attaching images to metal surfaces such as the front of the fridge.

Plastic putty (such as BluTac) allows the image to be attached to hard surfaces or to cover another image.

Velcro allows the image to be attached to backing boards and many soft material surfaces. The fluffy Velcro strip is attached to the backing boards. Attach the hooked Velcro strip or dot to the back of the image to enhance flexibility in their use e.g. they can be attached to the mat when the child is working on the floor.

Backing boards

Backing boards are used display the image while it is being used.

- Flexible boards can be made in various sizes and designs to give flexibility in how the images are used.
- Cut a piece of card to the desired size then laminate.
- Attach a strip of fluffy velcro the whole length of the card.
- The board can be used horizontally or vertically as needed.
- Use a wooden ruler to provide a strong, rigid and compact backing board that can be placed on the child's desk without taking up too much room.
- Attach a strip of fluffy velcro along the length of the ruler.

Desk set

A desk set contains four or five images that the child will use throughout the day e.g. a hand up card, a my turn card, a help card and a finished card.

- The images can be attached to a small storage backing board which is taped to the child's desk.
- The child is encouraged to hold up the cards rather than leaving their seat or calling out when they need attention.

Multiple copies

- Always make multiple copies of an image. This will save time later when new copies are needed.
- It is important to make a master copy of all images as well as the working copies. One copy should be seen as the child's resource and should be sent to next grade with the student. As it is part of their communication system they will need it in the next grade.