Play AT ICT Northern Ireland

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AbilityNet
Adapting Technology ▪ Changing Lives

Cause and Effect Play Activities using Assistive ICT Technology

This factsheet will provide basic help and advice to support pre-school children with a range of Neurological conditions to access cause and effect activities using assistive ICT (Information Communication Technology). It is important to note that each individual child's requirements and needs will vary greatly and this factsheet provides general information and guidance.

If you would like further advice or support please do not hesitate to contact us:

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www.abilitynet.org.uk/playni

Developing Cause and Effect skills

ICT can help a child understand cause and effect play whether this is for progression or entertainment. We use a wide range of assistive technology and software to develop cause and effect skills. This factsheet will detail techniques we use and equipment we have found works with pre-school children with neurological conditions.

When supporting a child using the technology it is important to keep the input simple and the reward fun and motivating so that it is worth the child's effort to stay engaged with the activity.

Inputs

Touch Monitors

Touch Monitors can be really beneficial for children with a neurological condition who can physically and visually access the screen, as it is the most direct method in getting a response from the computer. For most children pointing at something is a natural way to communicate and when they point and touch the monitor, it creates an immediate response on the screen. For more information on Touch Monitors please refer to our factsheet “Using Touch Monitors”.

Touch monitors can be used with cause and effect software that has sound and visual rewards. The software can be set so that the child can press anywhere on the screen to produce the reward or set so that they have to locate and point at a specific area on the screen to produce the reward.

To provide as much feedback to a child as possible some touch screens can produce a beep once they are pressed, however some children may focus too much on the beep rather than the specific on screen reward thus this may distract them from the activity. You can remove the beep sound if required by going into the monitor settings. It is important to experiment with the settings with the individual child you are supporting to meet their needs.

Switches

Assistive Technology switches come in a variety of shapes and sizes and can be operated by any controlled movement of the body. AbilityNet often use switches such as the ones shown in the picture when working with pre-school children with neurological conditions as they are far less complex than a keyboard or mouse. However some children may require more complex assistive technology switches and mounting systems. For more information on this please refer to the "Using Assistive Technology with Pre-School Children" factsheet that is available on our website www.abilitynet.org.uk/playni . It is also important to note that you need an adaptor to connect switches to battery operated toys and computers and more information can also be found in this factsheet.

There are three stages an individual may have to work through before they can independently understand they are controlling the switch to produce the reward. It is also important to say that some individuals may not at any stage be able to independently engage with the activity and will need physical and/or verbal prompts.

The three stages are:

Spectator

This is where a child watches you using the switch and does not take part in activating the switch. You can do this working alone with the child but it also works well within a group situation so they are participating with their peers in watching the activity, promoting inclusive play and encouraging them to interact. It is really important to move on from this stage as soon as the child shows any interest in wanting to actively take part so that you keep them motivated.

Participant

This where the child will take part in the activity with you. This stage will encourage them towards independently pressing the switch at the correct time.

Using prompts

Physical prompts – for example, hand over hand slowly reducing to a gentle nudge on the elbow but always reinforcing with using “verbal prompts” at the same time.

Verbal prompts - for example, “press the switch”. The verbal prompt you chose must always be consistent and doesn’t differ from person to person, because if someone else comes along to work with them and uses a different command e.g. “press the button”, this can really confuse an individual.

It is important to decide on a style of prompt that will suit the individual child and then stick to it.

It is generally thought to be more productive to focus the child’s attention on the activity being controlled rather than the switch itself as it helps you to monitor whether the child understands the effect of the switch.

Idea for a child at the participating stage – Using a battery operated bubble machine, with a switch connected, you could ask the child to “make the bubbles”, to encourage them to press the switch.

Creator – The child is able to use the switch independently to play activities by themselves or in a group activity with other children. For example, playing with a switch accessible toy or piece of software that includes the switch user and their peers taking it in turns to play.

Rewards

The following selection describes some examples of rewards and activities using the assistive technology hardware to help pre-school children with a neurological condition develop their understanding of cause and effect. Each child’s reward type and style may vary greatly on their individual likes and dislikes but using the computer the reward will usually take the form of an onscreen animated image with relevant music or sounds.

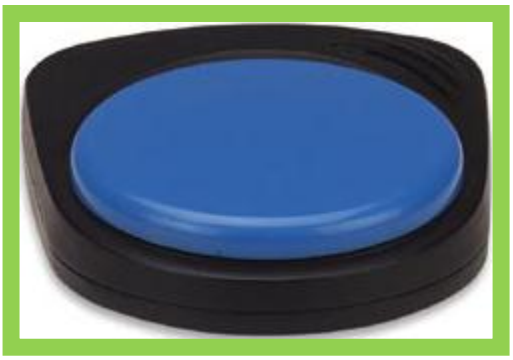
If a child needs to use a switch to access the computer and they have not used a computer before, it may be an idea to introduce the switch first using something they are familiar with e.g. Battery operated toy.

Using switches with battery operated toys

A battery operated toy such as the teddy pictured can provide a positive auditory visual and physical reward for pressing a switch. The switch adapted toy will usually activate once the switch is pressed and then stop once it is pressed a second time. However you can also set toys to work only when you press continuously, which also gives a child an understanding that they are controlling the external switch to operate the toy.

You can also adapt your own battery operated toys or devices to work with a switch by using a Battery Switch Adaptor. Please refer to the skill sheet on our website "Setting up a switch to use with a battery operated toy".

BigMack Switch - Single Message Communicator



Single Message Communicators are devices that produce a sound once a switch is pressed. They are especially good at teaching cause and effect as they do not require a computer. You are able to record messages or a sound, using this device, as a reward. For more information please see our "Single Message Communicators" factsheet.

Vibrating Switches

Pre-school children with a neurological condition may have visual or sensory difficulties and may find that they need a more direct and connected reward to understand or use cause and effect methods. A switch such as a Gooshy Switch as seen in the picture will vibrate, light up and play music once pressed. This provides a child with more tangible feedback and reward. You can also change the settings to meet the individual needs, for example set the switch to only vibrate so the reward can be switched from using the device on its own as a reward, to using it to control the activity on the computer and the reward becomes the animation on the screen.

Software

Software needs to be stimulating and motivating to hold the child's attention. Colours, pictures, animation, large text, sounds and speech can all help. It is recommended that software is chosen by people working with the child such as family, carers and early years professionals. You can buy specific software from a range of suppliers who provide comprehensive clear descriptions of the software. However there are also plenty of free resources available that work with touch monitors and switches when using a computer and we have compiled a list of free software that is available on the internet. For more information please refer to our factsheet **"Free software for children under 5"**.