

IT as a facilitator to Design and Technology for pupils with special needs

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There are two ways in which IT can have a valuable role in relation to D&T for pupils with special needs. One as a support for communication, and two, to facilitate making.

There are the usual standard quotes in the orders that allow pupils unable to communicate by speech, writing or drawing to use means including the use of technology or symbols as alternatives. But what does this mean and is it really that straightforward?

Steven is 14, he has severe physical disabilities, has difficulty with speech, and uses a pointer board with symbols on for much of his communication. To engage in cooking activities he works with a classroom assistant, who carries out his instructions. The first problem was that having pointed to an instruction she would then turn away to do it — preventing him from communicating until she returned. Out of frustration, and to speed the process up, it was very easy for her to 'add' to the instruction so that things came out all right. — How much of the work is Steven's?

He started to use a piece of software that allowed him to write with these symbols, so that his helper could read the messages when she was ready. Steven could write the next

action while the first was being carried out. He could start to plan and sequence the activities himself. He also started to see that he could take a more active part in the process. The helper responded well, she took a lower profile in the process and became a more mechanical operator. Steven is now doing a lot of cooking. He is thinking about recipes, he is being creative with new ideas, trying new foods and new ways of doing things. He identifies a design need, he plans it, he enables it to be carried out, and he evaluates it by tasting and, if necessary, modifies to improve.

In my view Steven is completely engaged in the design process. But this raises an interesting question when it comes to assessment, and one that warrants a full debate.

Brian, who has emotional and behavioural difficulties, never seems to manage to produce work that he can be proud of. His ideas are always much better than the things he can produce. When he used a lathe to produce a set of brass chess pieces this motor difficulty wasn't a problem. He could put his energies where it mattered — in designing.

Embroidery machines, sewing machines, lathes, plotters and cutters — these are all





Build



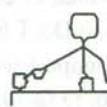
the



tallest



tower



that

will



hold



an



apple.



Use

straws



and



plasticine



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Cut



the



straws



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scissors.



Stick



the



straws



with



plasticine.



Measure

your



tower



before it



falls



down.

devices that are arriving in schools, and are the very tools that students may well go on to use in the workplace. They are the tools for making artefacts that are fit for purpose, that are true reflections of the individual's creative ideas, and that help to genuinely provide some equality of opportunity — provided the student can have access to them, of course.

The other aspects of technology that support the design process is in communication. As well as pupils like Steven, who have severe difficulties, who may well have communication aids and strategies planned for them, there are large numbers of pupils for whom reading and writing are barriers to creativity and development. The use of symbols to support reading and writing — through the use of illustrated text, can make just the difference. It may be through having readable instructions/work cards or plans, or it may be by being able to write, or read one's own writing. How many times have you seen

children writing using a Concept Keyboard, with a beautifully illustrated overlay, with pictures to help them find the words — only to find that the following week they cannot read it back? By using illustrations on the page with their writing, these pupils can get the necessary prompts to gather the full meaning of the material.

■ Illustrations of symbol writing

These illustrations could be in symbols, or could be real images, taken with still or moving video cameras which are then digitised. Some schools are using this technique a great deal to record achievements. The technology is very easy to use, and well within the capabilities of most students, including some of those with severe learning difficulties. Photographs are taken with the camera, digitised at a single key press, and then imported into a word processor to add to their record of the activity. It can capture that

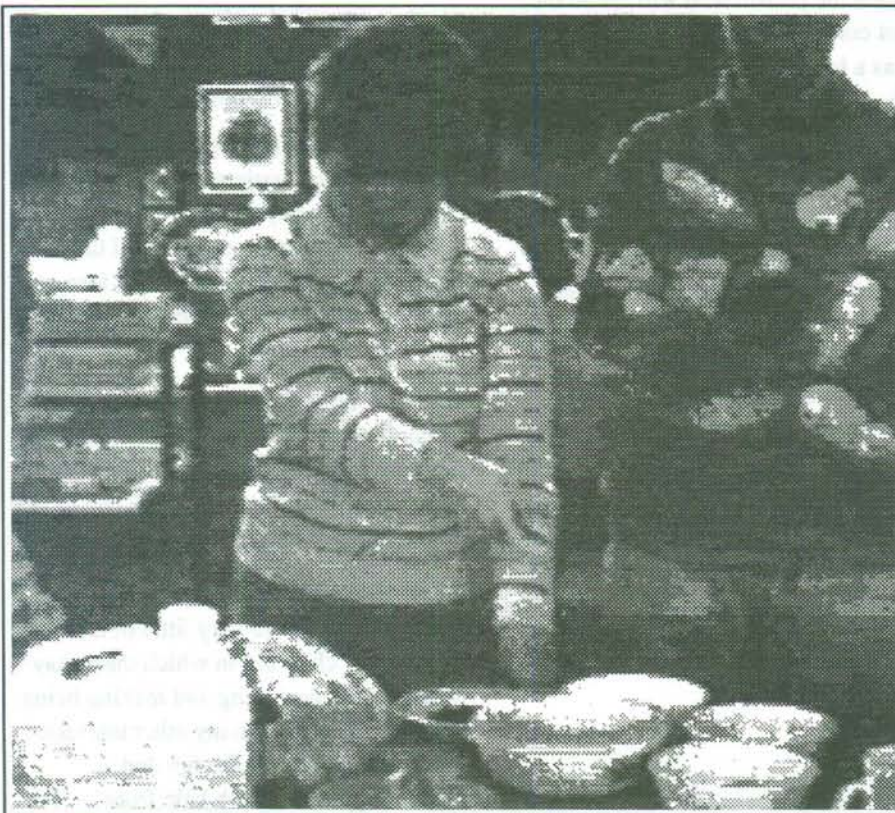
I and Mick build a tower

I make a square tower and put the apple

on and crash

Mick put some more straw outside with plasticine

I make a triangle in the middle



passing moment such as a models roughly assembled as a design draft, a well presented finished pizza, a group working together.

■ Illustration of digitised images from Park special school

Our students have high expectations. They are used to high quality of images and objects. If they are to be motivated to genuinely engage in designing and making they need the tools and materials that will enable them to do this. Pupils with special needs have an equal right to this as other students, and for many, technology can provide the key. The permission granted to pupils unable to communicate by speech, writing or drawing needs to be broadened, so that the facilitating role of technology in both communicating and making is fully recognised. Guidance is also needed for us as teachers and to those who assess, to enable the rights of the individual to realise and demonstrate his or her full potential without compromising standards in Design and Technology.