

Primary Focus on ICT and Inclusion Autumn 2006



Naace

Advancing education through ICT

ICT Co-ordinators Course

Information Session

A free information session has been organised for:

potential course providers

local authorities

anyone interested in the course

This is a course for teachers who want to become ICT Co-ordinators or Subject Leaders in ICT from both the primary and secondary sectors.

- It has been running successfully for many years and now has the endorsement of the Training and Development Agency for Schools (TDA) to support a national roll out.
- It was written by Janet Roberts and Martyn Wilson of Hampshire LA.
- It is accredited by Nottingham Trent University.
- Upon successful completion, teachers will be awarded 30 credit points at level 3 which could count towards a Masters degree.

If you want to learn more about this course you are invited to attend an information session being run on behalf of Naace by the writers of the course: Janet Roberts and Martyn Wilson.

The Information Session will be conducted interactively by the people who know. All of your questions will be answered, all your comments listened to and addressed.

**Drayton Suite
Quakers Friends House
Euston Road
London**

30th November 2006

Registration and coffee from 10:00am
The session will last for two hours
Lunch will be provided

There are 60 free places available for the Information Session.
To book your place or for further details please contact
Luke Lewis-Dennis
Naace Course Facilitator
0870 240 0480.

Primary Focus on ICT and Inclusion

Autumn 2006

Editorial

Anyone who works with pupils who have additional or special educational needs will understand when I say how difficult it has been to try to cover the range of needs that this encompasses. I am delighted to have such a diverse and talented group together in one publication and between them have created a magazine that should have something for everyone and lots more to make you think and consider how your classroom practice could benefit from their experience. One of the problems I had to deal with was having a surfeit of quality articles! You will find, therefore, that some of the articles can be accessed online and will be available as a pdf to download.

I hope you enjoy reading the articles and that you are inspired to try out some new ideas in your classroom.

Editor Sandra O'Neill

About the Editor

Sandra O'Neill is a Teacher and Coordinator of the CALL (Communication Aids for Language and Learning) Centre Training Services. She began teaching in 1977 and worked as a local authority ICT SEN Advisory teacher before joining CALL. Sandra has been a member of Naace since the merger with MAPE and had been a member of MAPE since 1990. She is currently on the Primary Working Group and has helped organise a number of Naace training events and Conference in Scotland.

Sandra can be contacted by email at:
sandra.oneill@education.ed.ac.uk
<http://www.callcentrescotland.org.uk>

Contents

- 2 Access Toolkit, Graeme Bruce
- 6 Developing Communication through Music, Andrea MacBeath
- 8 Discover a new way of learning, Sue Murray and Liz Connors
- 11 Transition: How ICT can help ease the anxiety, Fiona Large
- 12 Sound Ideas, Graham Dean, Liz Alderson and Trudy Dorsey
- 15 Symbol Resources Support Teaching, Emma Loynes and Julie Williams
- 16 ICT and Literacy Difficulties, Colin Hill
- 20 Using ICT to improve Memory Skills
Chris Singleton
- 24 A Disgusting Week, Pete Wells
- 28 ICT, multimedia and access to literacy, Richard Walter

Online

- Make My Day, Symbol My World
Emma Loynes and Susan Parker
- "I won't need you now, Miss", John Liddle
- Digital Exams and Assessments, Paul Nisbet
- Computerised Screening and Assessment
Chris Singleton
- Web site reviews, Jim Merrett

Available online at www.naace.org.uk

Access Toolkit

An Experimental Project in Making the Curriculum Accessible Through ICT

Graeme Bruce Service Coordinator, ASPECTS



It all started when a little girl called Ellis was referred to ASPECTS (Aberdeenshire Education's Support Technology service for schools) in late June 2004. Ellis is a pupil with Cerebral Palsy, confined to a wheelchair, with limited motor control and quite unable to hold a pencil or even use a conventional mouse and keyboard. Graeme Bruce (Service Coordinator of ASPECTS) tells how he became involved in a fascinating project aiming at 'total inclusion' through ICT.

P1 – school says 'we'd like Ellis to do the same work as the other children.....!!'

Background

Ellis had started off her education at a Special School nursery, but it quickly became clear to teachers and parents that she had considerable ability and was more suited to a mainstream nursery environment. The move to mainstream was therefore arranged even before she got to P1 stage and it was in the nursery at Dales Park School in Peterhead that I first met her and began devising support strategies.

Ellis immediately impressed us all with her engaging personality, enthusiasm for ICT and dogged determination to succeed in everything she did. In many ways, it was easy to forget that she was still pre P1, such was the maturity she showed.

I assessed her to see what sort of access system might prove effective and unfortunately, motor control was not sufficiently good for her to use a mouse or even rollerball (to all intents and purposes, she only has limited use of the right hand and because her fingers tend to be clenched, it is difficult to achieve fine control of an access device.)

We moved on to switch access and almost immediately, she mastered a 'two switch' setup – dotting between two jelly bean switches with her right hand. This of course opened up a range of ICT activities such as colouring pictures, exploring nursery rhymes,

onscreen jigsaws etc and in the remainder of her nursery year she went through as much 'off the shelf' switch software as I could throw at her.

Then the school advised me that they were going to place Ellis in P1 – 'no holds barred' as it were and they were wondering if I could arrange for her to do the same class work as the other children on the computer, using switches.

Switch control with commercially produced packages is reasonably easy to achieve, but even if you can cover the same learning outcomes as non-switch users, you're still not really offering the 'same' curriculum and I began to realise that what we needed was the 'genuine article' in electronic format – with switch access thrown in!

'The genuine article' for P1 children in Dales Park School, like many P1s in Scotland is based around standard materials such as Ginn Language, Heinemann Maths etc and although these suppliers do offer some materials on CD there's nothing that's switch accessible - and so it was that I started to look at ways to convert the paper based materials in class, to 'electronic' versions – with switch access.

Exploring software platforms

Scanning in the paper based materials was not difficult (albeit extremely time consuming)

but I spent some considerable time searching for software that could present scanned images of book pages with 'interactive' functionality. Powerpoint and Clicker looked like possible candidates but neither offered an ability to overwrite the pupil's responses over the page images and print them off as an acceptable alternative to physically completing workbooks with a pencil. From the start, I was adamant that I wanted something that would support:

- A wide variety of 'written' activities, such as 'colouring in', drawing, matching etc, not just confined to adding numbers or words.
- The ability to move from page to page of a workbook without intervention from teaching staff.
- The possibility of printing completed work under switch control.
- An 'end product' that matched work done manually as closely as possible.

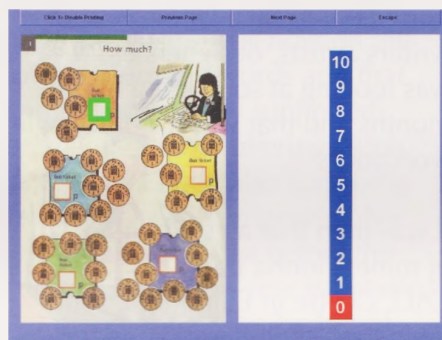
I then hit upon Mediator software – an unusual product in many ways that is really targeted at people who want to author CDs for training and suchlike.

First experiments

I began by constructing a basic screen template that would remain constant throughout all tasks and in many ways it began to assume similarities to a Clicker screen ie

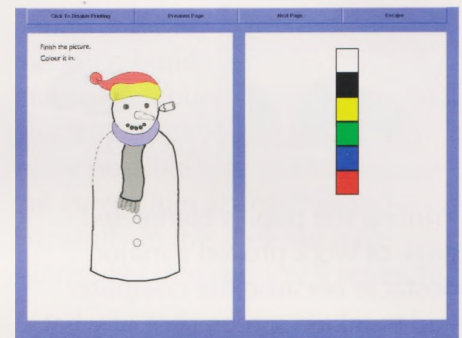
a sort of 'grid' area where choices of response are made and the 'writing' area where responses are recorded. Unlike Clicker, however, the 'writing' area took the form of a real workbook page, exactly as it appeared on paper and the 'responses' made by the pupil would be arranged so that they landed exactly where the child with a pencil would ordinarily make them.

In the screenshot below you can see one of the simpler tasks (a page from Heinemann Maths)

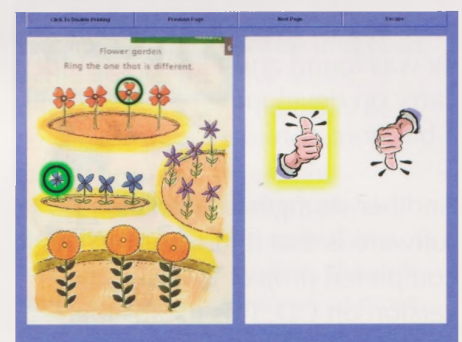


The numberline on the right is 'scanned' by pressing one of the switches repeatedly and a selection is made by pressing the second switch. The answer 'lands' in the green highlighter box. The pupil is then given an 'undo' option if required, before being moved on automatically to the next question on the page.

When the last question has been completed, the program automatically prints the completed page and turns over to the next page, ready to start all over again.



Initially, I experimented with simple number tasks, but then I began to explore ways of doing things like 'colouring in' (a common requirement in P1!) Again, Mediator offered this functionality through an ability to flood a chosen area of a picture with a selected colour then move on to the next part.



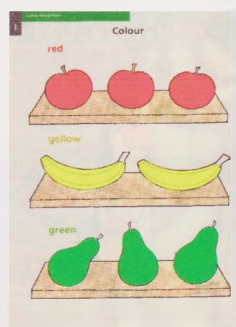
As the possibilities developed I found I could set up activities for things like 'dot to dot', matching objects by drawing lines between them, placing ticks, crosses, loops and much more.

Setbacks!

It would be nice to think that this all ran smoothly, but of course the truth was very different! I was

Access Toolkit - An Experimental Project in Making the Curriculum Accessible Through ICT

using a piece of software that had never really been designed for 'Special Needs' use and some of the operations I was asking it to do were in fact 'workarounds'.



Printing the pupil's completed page of work proved a major obstacle because the computer had to take a screen shot of what was actually being displayed at the end of the task, select the precise area that represented 'the page' and paste it into Wordpad for printing! It sounds clumsy and cumbersome, yet it seems to work! At first, however, I spent many frustrating weeks where it refused to print altogether. I even sent a sample of what I was working on to Mediator's technical support centre in Denmark and they shook their heads! Eventually, though, a fix was found and I knew I could carry on developing resources with a bit more confidence.

Another strength of Mediator software is that it can convert your completed project to a runtime version on CD. This means that you can give a school the CD and simply tell them to stick it in the drive and wait – the CD autoruns and continues without having to go through any sort of installation or suchlike. Most importantly, the 'end user' doesn't have to have Mediator software on their computer at all! So there was potential for cheap distribution to schools.

Switch control was achieved by having the switches emulate left and right mouse clicks and I found that the Crick USB switch interface worked well.

More setbacks: the copyright problem!

Technically, it was beginning to look as if the system might be viable, with the possibility of scanning in almost any paper resource and bringing it up onscreen with switch access, but I knew full well that there was still the hurdle of copyright to overcome.

A phone call to Heinemann initially proved disappointing. Although they were willing, in theory, to grant permission, they said they would have to secure permission from everyone who had been involved with a particular workbook. That, in fact, turned out to be a whole host of writers, artists, designers etc! I was looking at something like six months and that was for one single workbook!

It was then that a good friend of mine, Fionna Balfour at the CALL Centre in Edinburgh, sent me details of the legislation for visually impaired pupils. Until then, I had not realised that 'visually impaired (VI)' does, by the letter of the law, also include children who can't focus on text, or who can't physically hold or manipulate paper materials. Ellis, of course falls into this category! The point is that it is perfectly legal to photocopy or scan materials for VI children and I felt that because my system employed switch access, this would almost certainly assume that the user would not be able to manipulate a book in the conventional way.

I immediately emailed my contact at Heinemann, pointing out that the pupil in question fell into the VI category as interpreted by the legislation and within half an hour I had permission not only to convert their materials to electronic format for Ellis but also to distribute to other children within the same category in the UK.

Refining the system

So far, I'd managed to put together a number of different tasks and a common approach was developing for 'composing' the activities: you scanned in a page of a workbook, 'placed' responses on top of it where the child was expected to put answers then produced the resource as a CD.

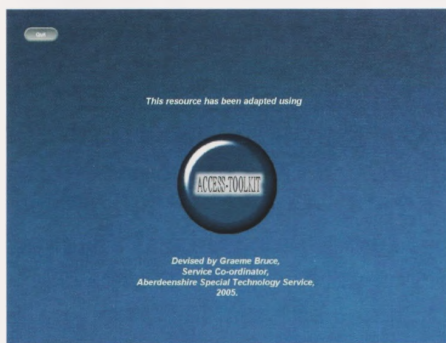
The next challenge was to produce something that could be used by someone unfamiliar with the complexities of Mediator, a sort of 'toolkit' that could be adapted for almost any given workbook.

Eventually a set of templates emerged. All the 'composer' would have to do is:

- Examine the workbook page to see how many questions there are.
- Scan it in – save as a jpeg.
- Pick a template with an appropriate page size (Mediator prints and moves on after the last question on the page is reached, so you need to pick a '6 response' template for a page with 6 questions and so on)
- Insert the scanned image into the template.
- Drag the ready made responses onto the precise spots where responses have to be 'written'.

One snag turned out to be pages with 'mixed responses' – in other words, situations where the child has maybe to count some object and write in the numbers, then colour in the objects and finally tick the 'odd one out'. These tasks are common in many P1 workbooks. In the event, a scenario such as this turned out to be quite viable but only by using a few templates, copying and pasting parts from one to the other. Not difficult – but fiddly!

What finally emerged from all of this is what I've called the 'Access Toolkit'.



It's a set of templates (ready made Mediator projects) which any school could use, along with their single copy of Mediator software to convert a wide range of paper based resources into electronic format.

How did it work in practice?

We bought Ellis a special workstation with a TFT screen that slid down into a slot at the rear of the desk. The intention was to provide her with a desk that fitted with all the other desks in the classroom and which could be integrated into a group so that she was firmly 'included' in the class – physically as well as in terms of curriculum.

This desk allowed the computer interface to be completely hidden when not in use, but which was capable of being pulled out and

ready to use in seconds. We chose this in preference to a laptop because the switches needed to be permanently wired up to be convenient and reliable. Ellis took to the system readily and to date she has covered about six of the early workbooks in Heinemann. I have also developed templates for Ginn readers so that she can 'read' the normal class readers without necessarily having a classroom assistant to turn pages for her.



Oddly enough, we expect things to become easier as she grows older because she is now on the brink of forming words and that can be more easily supported on the traditional offerings such as Clicker. Ellis is also surprising us all by actually improving her motor skills and just before the summer break this year we started her off on a Big Keys keyboard with keyguard. We are noticing that there is less of a tendency for her to clench her fingers and hopefully she may be able to cope with a keyboard of sorts very soon.

It is likely, though, that we'll continue with the 'Access Toolkit' materials and switch access for a while yet and a next step will probably be training school staff to 'compose' activities themselves with the sets of templates.

Needless to say, the staff at Dales Park School in Peterhead have been tremendous. Even although they have had no previous

experience integrating a child with needs similar to Ellis, they have embraced the opportunity with great enthusiasm and sensitivity. We have been fortunate too in having parents who have been wholly supportive of the project throughout.

All too often these days, children are said to be 'included', but in reality that only means being in the same building or room as mainstream pupils. True inclusion challenges schools to look at every possible way of making the curriculum accessible and hopefully in this case we have succeeded in some small measure.

Graeme Bruce can be contacted at

Email:

graeme.bruce@aberdeenshire.gov.uk

Website:

www.wiredshire.org.uk/aspects

Editor's note: The legislation that Graeme refers to states that :
The definition of a "visually impaired person", in accordance with s.31F (9) of the Copyright, Designs and Patents Act 1988 is a pupil: "(a) who is blind; (b) who has an impairment of visual function which cannot be improved, by the use of corrective lenses, to a level that would normally be acceptable for reading without a special level or kind of light; (c) who is unable, through physical disability, to hold or manipulate a book; or (d) who is unable, through physical disability, to focus or move his eyes to the extent that would normally be acceptable for reading."

For more information go to :

http://callcentre.education.ed.ac.uk/downloads/quickguides/access/CLA_Photocopy.pdf

Developing communication through music

Andrea MacBeath, Richmond Park School



Richmond Park School is a special school in the south side of Glasgow. We are a school primarily for children with physical impairments but like most special schools in Scotland there has been a gradual change over the last few years in the range of needs of our pupils. We are seeing a growing number of children in the school with communication difficulties whether it be children with no intelligible speech, articulation difficulties, or children with autistic spectrum disorders. Each of these groups of children, of course have different needs and so various approaches have to be adopted in the school to develop their communication skills.

With one group of children, however the notion of 'developing communication' encompassed a set of skills that ordinarily would not be addressed in the classroom. Three of the children are unable to produce any intelligible speech and lack the hand function to directly select symbols. Where they are unable to eye point to something in their immediate surroundings, expressing their needs can become very difficult without some means of

augmenting their communication and can leave them frustrated or withdrawn. Boardmaker symbols have been extremely beneficial in overcoming some of these problems. Eye pointing to symbols boards or books have allowed this group of young people to express a range of more abstract ideas. Although this works well in the classroom context we anticipated that children would eventually need to have access to a high tech communication device if they were to initiate dialogue and engage fully with others independently and of their own volition. For some, it was clear that this would require a switch to access the device. We decided to bring these children together on a daily basis to develop the very specific set of skills required to operate a communication device using a switch.

Where any communication device is accessed by a switch, different areas of the screen are scanned or highlighted and the user has to press the switch to select the icon, word or letter they require. Broadly speaking, developing the ability to anticipate the 'right' moment to hit the switch was one of the first skills we wanted to work on. In helping children to achieve this the addition of music proved to be very beneficial.

In the initial stages the pupils in the group were all using 'step by steps' which they activated with switches. The 'step by step'

approach is a fairly low tech communication aid which allows a non verbal child to play a pre recorded message, usually to relate a piece of news or make simple choices. For the purposes of developing the children's timing skills we used this facility to play either an instrument or the line of a song. If the song was to work and to have a coherent sequence it obviously required everyone to come in at the right moment as it would be in an orchestra or choir. With this approach, children using head switches became as adept at coming in on time as did the children using real instruments.

These music sessions were not only motivating for the pupils but were also an excellent way of developing the skills they will require to operate far more complex communication devices. The one downside of the step by step however, is the quality of the recording. The sound of the bongo drums, for example, was not dissimilar to the sound of the tambourine. It was something we thought we would just have to live with until we found a solution on an 'ICT and Inclusion Day' in the shape of the 'Banana Keyboard'.

The banana keyboard

The banana keyboard has sixteen oversized keys and is yellow and curved, hence the name! I am not much of a musician myself but I am told that it can be played rather like an ordinary keyboard. The beauty of this piece



of equipment for us was that it has switch sockets, which allow for connection of up to eight switches. The keyboard requires to be connected to a computer and comes with its own software. This now gives access to hundreds of different pre recorded instruments and sound files. Each of the switches and keys can therefore be programmed to activate any one of these files. On occasions each switch will be programmed to play one note alone, in which case the composition is dependent on the whole group following a symbolised score of sorts and playing at the right time. Sometimes each switch will activate a 'wav' file. These include animal noises, hairdryers, door bells and fire engines, for example. This repertoire of sound effects can then be used to add interest to a story or for a sound poem.

Our focus initially was on developing communication skills for non verbal children and we feel that our music session helped us achieve that. However, as we became more ambitious the limitations of the software were becoming increasingly apparent. The music teacher felt there was little opportunity for invention or for the children to record their own arrangements. As a consequence we are currently on the look out for a very simple editing suite that might provide the both flexibility and accessibility. Despite these limitations to our ambitions there have been a number of positive

spin offs that we had not really anticipated. Children, even those with profound or complex needs constantly surprise us with their improvisation and imagination when there is an incentive and conditions which promote their interest and engagement. So while the banana keyboard imposed constraints on what children were able to do we found that children can often outsmart the technology.

The art of improvisation

Although we bought the keyboard with a specific group of children in mind, we were keen to use it with other children in the school. It has been designed for children who have poor motor control or who experience difficulty applying downward pressure. Children who are unable to isolate keys on a standard keyboard, we found, were able to use the back of their hands, a fist or even their arms to sweep a much larger area on the banana keyboard. This applies to several of our pupils one of whom I will describe very briefly.

Daniel is a P6 boy with a passion for rock music. Last year he approached the music teacher asking for her help in writing a song. Over the course of a few weeks the teacher helped him to write the lyrics and to compose the melody. It was a tribute to his hero: Dr Who. Daniel has poor motor function and is unable to use a standard keyboard or guitar. Nor is he, by his own admission much of a singer. He was able,

however, to contribute fully in any performances of the song using the banana keyboard to access the sound effects such as the tardis, the daleks or the voice of the man himself. Daniel has since performed 'Dr Doctor versus the Daleks' on various different occasions not least at the 'ICT and Inclusion Day' this year. Despite not being much of a singer he's a pop star in our school.

Predictably there has been a renewed interest in music from the children at the upper end of the school and our music teacher is struggling to keep up with our budding Elton Johns. However this has been just one of the benefits that exceeded our more modest aims at the outset. It powerfully illustrates the limitation of setting modest targets which underestimate children's intelligence and capacity. We have learned along with our pupils, and the non verbal children I described at first are now in fact using high tech communication devices to express themselves. That in itself feels like a huge achievement.



Discover a new way of learning

Sue Murray, Mango Marketing

Liz Connors, Discovery School

The Discovery School, Kent, a LEA maintained school provides a wonderfully rich learning environment for children from a wide social mix. However, the majority of pupils come from advantaged backgrounds and arrive at the school with the expectations to match.

The school opened in September 2003 with 88 pupils, but now has 209 on its roll. "An effective and rapidly developing school with an educational provision which is cohesive" that has "been undertaken with professional rigour and realism" are comments from their first Ofsted inspection report. This is a report that would be welcomed by any school. However, for 'The Discovery School', these are just two of a wealth of similar statements.

With inclusion high on the school's agenda, and a relatively large number of children with Autistic Syndrome Disorder (ASD), The Discovery has demonstrated the potential for using a creative eLearning resource across the curriculum to motivate and encourage the development of all the children including those with ASD.

Although first identified in 1943, autism is still a relatively unknown disability. Yet autistic spectrum disorders are estimated to touch the lives of over 500,000 families throughout the UK.

Children with autism have

difficulties with everyday social interaction and struggle to communicate and relate to the people around them. Their ability to understand other people's emotional expression is limited and while children with autism can often have accompanying learning disabilities many have normal to high levels of IQ.

Liz Connors, Specialist Advisory Teacher for ASD at Kent LEA, explained their situation; "I realised that mainstream schools required support ensuring the classroom learning environment was appropriate for all children including those with ASD. At this time I was in an 'Outreach' role within the authority and was lucky enough to visit a primary school, using Kar2ouche's Vikings eLearning resource. The use of Kar2ouche's story-boarding, which was highly visual, structured and employed the use of speech and thought bubbles instantly appealed to me as I recognised how this would support improvements in reading and writing as well as providing a medium of learning that supported the special educational needs of the children with ASD."

Kar2ouche is a story-board and virtual role-playing eLearning application that engages children in highly visual environments; in it they can direct and experience a range of situations for themselves. Using a wide selection of backdrops, characters and props students can develop contextual

understanding, interpretation skills and creative expression across a wide range of subject areas. Text and thought bubbles can be added to the characters with speech corresponding to the text recorded by the children. While it is ideally suited to creative literacy this learning tool spans the curriculum.

Liz continues; "One key advantage of using Kar2ouche with all our children, but especially our ASD pupils, was the motivation, creativity and communication skills it generates and develops. These skills are often weak in these children. Another trait with ASD children is their inability to follow the rules of conversation (listening, turn-taking, empathy, being relevant and concise) which is perfectly enhanced and encouraged with the story-boarding activities of Kar2ouche. "However their impaired understanding and use of body language (posture, gesture, facial expression etc.) restricted their usage of the traditional characters in the Kar2ouche resources."

Liz explains how they solved this particular problem; "We found ourselves in a situation where we recognised the potential benefits of Kar2ouche for the majority of our children. However our commitment to supporting the learning of all children meant that Kar2ouche fell a little short of our complete requirements. I contacted Immersive Education, developers of Kar2ouche and we met to discuss the problem. After



“The social communication difficulties that several of our children experience are related to difficulties with their visual processes. Kar2ouche is so visual that it inspires everyone,” says Cheryl.

a period of consultation between Educational Psychologists, Speech and Language Therapists, Specialist Teachers and Immersive and enormous support from Kent LEA, we received our first copy of Kar2ouche Social Communication. This featured generic stick characters with no facial expressions (although these can be added by the children if they want) or other identifiable characteristics. This enables the children to concentrate on the task at hand and not to be distracted by these details. It also includes pre-prepared scenarios specifically related to the areas of challenge encountered by children with social communication difficulties. Also, as with all Kar2ouche packages, it has the facility to import your own backgrounds, thus enabling staff to relate storyboards directly to the students’ own experiences.

Deputy Headteacher, Inclusion Manager and Year 5 teacher, Cheryl Davis O’Dell began to introduce the two versions of Kar2ouche into the school and has witnessed some truly outstanding results.

Taking one example of a lesson activity, Cheryl demonstrates what makes Kar2ouche so effective. “My Year 5 class were recently investigating ‘Myths, Legends and Fables.’ We searched for fables on the internet and discussed their morals. I then invited the children to suggest their own ideas of stories that could have a moral. The next phase was to challenge the children to use Kar2ouche to create their own stories that would be projected in the school hall during Tuesday and Thursday’s assemblies. Before we went to the computers the children began to create their fables using the blank grid pages offered by the resource. Once this had been completed they could then transfer their ideas into Kar2ouche. The learning resource is a highly sophisticated product, but is still simple to use, so once our ICT Technician, Karen Rutland had briefly learned how to use Kar2ouche she was able to teach the children very easily. “The most obvious areas of learning that can be supported by Kar2ouche ‘Social Communication’ in addition to the obvious ones of Social Communications, Emotional Literacy and PHSE are Literacy and Creativity. We certainly see more able writers developing, however the resource is proving to be successful in bringing subjects alive across the spectrum of the curriculum. Backdrops were down loaded from digital photographs the pupils had taken and web pages, introducing new ICT skills.

It has truly been embraced by all the students, as Becky aged nine summarises; “It is such fun and it brings all my friends together, but it’s actually serious learning.” “Another difficulty with children with ASD is their inability to imagine or empathise with what other children are thinking. Using scenarios in the story-board, such as a fierce dog barking at a child, provides the ASD children with the challenge of adding in a thought bubble with text to develop an idea of what the child might be thinking in that situation.

“All children, especially those with ASD, relish producing high quality publishable material which is another reason why Kar2ouche is ideal. Regardless of their ability, when they run their story-board up on the interactive whiteboard for all the class to see, the motivation this provides to the children is profound. The moving images and speech suggest a highly professional and skilled publisher –and the results seem unbelievable when compared to the learning environment pre-Kar2ouche. “What has also been interesting to note is that whether they are children with ASD, or whether they are very able pupils who nevertheless struggle to communicate, Kar2ouche allows all of them a single platform through which to express themselves. Students can be very skilful and articulate when expressing their words and thoughts through the characters,

Discover a new way of learning

even though they would not necessarily be able to always express themselves verbally. Kar2ouche provides these children with an indirect way of communicating their thoughts and feelings. When used in groups and as part of a whole class activity it supports and nurtures a communicative and social environment.



“The applications for using Kar2ouche are limitless. We now also use it to ease the Primary/ Secondary transition. Story-boards that represent children with common transition concerns such as catching the bus to school, or forgetting their homework, are given to the Year 5 children with the solution to the problem at the end of the story. “It was on my birthday this year that the children really expressed what Kar2ouche means to them. A huge chocolate cake had been organised for a 3.00pm birthday party. At 3.00pm I asked them to switch off their computers as it was time for chocolate cake. Their silence raised the question of whether they wanted to stay working on Kar2ouche or have chocolate cake; their answer was Kar2ouche!”

Colin Hay, CEO, Immersive Education summarises;

“Seeing children highly motivated to learn using Kar2ouche is wonderful. However, to be able to develop this resource to support the inclusion of children with very specific skills and/or difficulties is something we were delighted to be able to do. Kent LEA worked closely with us to ensure Kar2ouche ‘Social Communication’ would be ideal for children Key Stages 1 – 3 with social communication difficulties in mainstream classrooms.”

For further information please visit:
www.imed.co.uk or telephone
01865 811099

Transition – How ICT can help ease the anxiety

Fiona Large

ICT Consultant (Primary)

East Sussex School Improvement Service

Fiona writes about a successful transition project for pupils from a special unit moving up to their local community school. As well as developing ICT skills it has enabled the pupils to transfer confidently to their new school.

Pupils from Hoddern Special Unit enjoyed a particularly successful transition to Peacehaven Community School (PCS). The unit, a special facility for pupils with language and communication difficulties, has been part of a transition project organised by the School Improvement Service (SIS). Since April 2005 the project has explored strategies for continuity of learning across transfer and transition. It involved the Newhaven and Peacehaven Primary and Secondary Schools. The groups of schools chose a variety of activities and strategies to support transition, involving film making, video conferencing, photography, theatre, dance and art activities. Hoddern Special Unit chose to use digital video cameras as a vehicle for pupils to explore issues and anxieties associated with transfer to secondary school.

Each participating school borrowed a digital video camera from the SIS and a day's training was provided to plan transition activities. Lynne Willmore from the Unit worked with Lee Hawkins from PCS to plan filming activities. The digital video activities build on and add another dimension to existing good practice at the Unit.

For Year 6 pupils at the Unit the transition process begins at the beginning of the summer term. Pupils usually begin to visit PCS each week until the end of term. They have opportunities to experience lessons, meet teachers, undertake activities with buddies as well as thinking about how they might cope with a range of situations at their new school. Digital photographs are taken to record events creating an album where pupils record their experiences. These are taken home to share with parents.

Louisa Parsons, Unit Manager explained that this was the starting point for the project. The children and parents were asked about their hopes and fears for their new school. Some of the concerns involved bullying, losing locker keys, using the swipe card system and getting to lessons on time.

During the summer term the Year 6 (P7) pupils worked with Lee Hawkins and the Year 10 (S4) buddies at PCS to plan and film different scenes addressing some of the children's concerns. All pupils had an opportunity to film and make some of the decisions about what to film. The end result is impressive. Lee Hawkins did an excellent job of putting the film together.

The short film lasting four minutes begins in the reception area at PCS and shows the swipe card being used to enter the school and to buy food and drinks. There follows

a demonstration of appropriate and amusingly inappropriate school uniform! The film ends with the Year 6 pupils asking the Year 10 buddies questions about their concerns.

Malcolm McNeill, Headteacher at Hoddern Junior School, along with other local Headteachers were particularly impressed with the video and decided that it would be a useful resource for all Year 6 pupils transferring to PCS to see. Louisa Parsons and Sarah Earl, teachers at the unit, have since followed up the progress of this group of children. Without exception, all of the pupils have made a very positive start to their new school. All of the pupils were able to explain what they would do if for example they were bullied or lost their locker key. They were confident about the basic routines which had previously worried them. The parents of these children have also reported that their children have settled well.

Louisa and Sarah have plans to build on this success and include more use of digital video with this year's cohort. They would like each child to plan, film and edit a two minute film exploring a particular transition issue. These short films will then be put together to produce a complete film. Tideway School are also interested in being involved in a similar project with the pupils from the unit next summer.

Sound Ideas

Liz Alderson

Trudy Dorsey

Graham Dean

E-Learning Consultants

Blackburn with Darwen Local Authority



The key to all meaningful communication is hearing and understanding the spoken word (listening) and being able to express yourself in the spoken word using a range of vocabulary (speaking). Even the youngest and least able children have some level of experience and confidence with using these as a means of communication.

Sound recorders can increase the scope of speaking and listening activities by capturing children's speech to be played later to a wider/different audience. They can also be used to enable the teacher's voice to be heard by more than one group of children at a time! Practical problems with cassette recorders have meant that the medium has not been as widely used as it could have been. Digital devices can solve some (we certainly wouldn't pretend all) of these problems.

There is still a perception that ICT only involves computers (and in the last couple of years interactive whiteboards). In this article we aim to describe uses of other (less expensive) sound recording technologies to help make our classrooms more inclusive, though we will also go on to look at some uses of PC software.

Sound recording technologies can assist with the Primary National Strategy 2006 priorities.

"Learning and teaching for dyslexic children" (Primary

National Strategy) lists equipment which should be available in the "Dyslexia-friendly classroom". Advice also includes the following. Use labels to help children find what they need and tapes for both listening and recording children's ideas. Make use of the digital recording facility on computers to record instructions or texts for children to listen to or to make their own recordings instead of a writing outcome.

Talking Tin Lids

Talking Tin Lids are simple recording devices originally designed to aid independent living for people who are visually impaired. They are magnetic so 'stick' to the top of food cans or can be strapped around coffee jars etc. A sighted person records onto the tin lid, saying what is in the tin. Pressing the large button plays back the recording to identify the contents. The original recording time was only about 10 seconds but with some persuasion the company has now released an additional tin lid which will record for at least 30 seconds with the added functionality that a second press of the large button stops the playback.

Uses

All of the activities suggested below have been tried and tested in schools within our local authority using the original short recording time. The ideas are listed in a very approximate age/difficulty order, starting with suggestions that are suitable for use in the Foundation Stage (Nursery).

1. Record a sentence onto the device, for example: 'look under the table' then give the Talking Tin Lid to a reception (P1) child. Hopefully they would look under the table, where they would find another device saying 'Look in the red box'. Preparing such an activity is quick and easy, it is easily customised for children with specific language or vocabulary needs.

2. Record the numbers one to ten on ten separate devices. Ask the children to sort them in order. The difficulty could be increased by just using odd numbers, multiples of three, etc. Sequencing isn't just the preserve of Maths. Record segments of a story or rhyme on separate Talking Tin Lids.

3. Record properties of a number (or a material in science, or facts about a character from history) on separate devices. How many clues do the children need to make a correct identification? Much valuable discussion could be prompted after each clue about possible answers and, importantly, what the solution couldn't be.

4. Record information about display items eg historical artefacts. This is ore valuable if the recording ends with a question leading to further research. Children could record their thoughts about their own work and these might be used as part of an interactive display.

5. For modern foreign languages the possibilities are almost endless. One activity which we have observed was matching statements about the weather to pictures of different weather conditions.

Inclusion

All of the uses mentioned above could aid inclusion. They certainly don't exclude children who have difficulty with reading and writing. Below are two more specific ideas for uses which promote inclusion:

1. For children who have trouble dealing with more than one instruction at a time, these could be recorded on a tin lid so that they have the opportunity to listen as often as they need to in order to complete the task (this also saves the teacher's voice and patience).

2. Children who have real difficulty with writing can record their work onto a tin lid and this can be included on displays so their work is being valued and they either haven't spent, what would feel like forever, writing it out so that it's readable or feel embarrassed about the neatness or readability of their work compared with others.

Benefits and Outcomes

More than half of our primary schools and children's centres now have Talking Tin Lids, obviously some teachers make more use of them than others, but during a recent Ofsted Inspection one school borrowed 16 from us (this was in addition to the 20 they already owned). They were being used in classes from reception (P1) to Year 6 (P7), but we believe that the use of Talking Tin Lids contributed significantly towards this finding.

One of the major benefits which

our teachers have reported is the versatility. Because they are so easy to use, activities do not take long to set up and recordings are simple to customise to suit the group or individual.

Having observed lessons where Talking Tin Lids were being used there were two characteristics which we have noted:

1. Children are actively listening. They could be seen holding the tin lids to their ears.

2. Entire classes have remained on task throughout lessons. Children were constantly engaged with their learning and not even the more 'challenging' children displayed any of their 'challenging' behaviour.

MP3 Players and Digital Dictaphones

Digital dictaphones were designed to replace the mini-cassette recorders used in commercial settings. Not being designed with children or education in mind, their controls are not always easy for small fingers to operate (although children probably find them simpler to operate than many adults). The earliest digital dictaphones which we used in schools required their own software in order to be able to transfer sound files to and from computers, but we have recently been using child-friendly MP3 players which simply act like memory sticks, plugging into the PC's USB port. They are capable of recording speech in .wav format. With these, file transfer is simply a drag and drop operation. The recording times on all devices we have used is measured in minutes (or even hours), rather than the seconds provided by Talking Tin

Lids. This, along with the file transfer ability, adds greatly to their versatility.

Uses

1. Recording a 'treasure hunt' with clues and activities for the children to follow or perform when they arrive at each stage: eg a maths "shape" trail where the recording directs children to different locations and asks them to draw (or even photograph) examples of different shapes.

2. Recording an audio tour of a role play museum, with questions for the children to answer.

3. Assessment: ask children to answer questions, e.g. say phrases in a foreign language, so that the teacher can listen without having to sit with each child throughout the day.

4. Recording a set of baking and making instructions for the children to follow.

5. Children recording their immediate thoughts for later review.

Inclusion

Recording a set of instructions onto the dictaphone makes it much easier for children who have retention difficulties to carry out the same tasks as their peers, they can work at their own pace, listening as often as they need. This aids independent working, removing the need to keep asking for things to be repeated.

Children who have difficulty writing, but who have very good verbal abilities, can record what they wish to write. Transcribing their ideas later allows them to concentrate on the writing, knowing that they have done all the thinking (and if they forget anything they can just listen to it again).

Sound Ideas

PC software - Sound Recorder

Sound Recorder is bundled with the MS Windows operating system. The PC must also be equipped with a sound card, a microphone and either headphones or speakers.

The program includes limited options for editing. The initial recording time is only 60 seconds. This can be lengthened by stopping the recording, then re-starting. The sound files produced are in the .wav format which can be incorporated into other programs. We have used it with children of all ages and abilities, initially with some support but subsequently with a high degree of independence. It is also possible to import sounds from an MP3 recording device and copy saved recordings from Sound Recorder back to the MP3 player.

Uses

Activities where the recording is made by an adult:

1. Record a series of instructions and ask the children to listen and arrange them in the correct order, perhaps link with a series of photos
2. Record a description of a character, Ask children to match to an image, compare with others, discuss the choice of vocabulary etc.

Where children make the recordings:

1. Ask children to say who they are and talk about something they like to do, their families, their favourite place to visit etc. In other words, the type of items which Key Stage 1 (P1-3) children write (or wrote) about in their "news". These recordings can then be incorporated in Powerpoint, Interactive Whiteboard flipchart/notebook, or Microsoft PhotoStory,

along with a digital photo of the child. Other children can then interact with it allowing them to discover more about their classmates.

2. Ask a child to record a description, could be of 2D/3D shapes using mathematical language, materials or animals using scientific language, historical artefact, etc. Other children identify the correct object from a selection of images, or indeed the real objects.

3. Record a 'radio interview' talking about themselves, or in 'role' as a character from a story, famous person or historical figure etc. These recordings could then be combined with a series of images to create a presentation/movie.

4. Make recorded 'notes' whilst conducting a science investigation which can either be listened to, to help 'write up' the experiment or indeed as evidence in itself perhaps linked to images or movie clips also taken as the investigation progressed.

5. Ask children to record a narrative for a story using a sequence of photos as a guide.

6. Record a performance of a musical composition and comment on the process of developing it.

This list is far from definitive but hopefully it will have sparked some ideas!

Inclusion

Imaginative and varied use of digital recordings can be used to fine tune, enhance and develop speaking and listening skills. Using Sound Recorder can also offer an important opportunity for



children to record, share and express their knowledge and ideas about a subject without having to master the additional skills of reading and writing. Such recordings can provide evidence of that child's prior knowledge and understanding of a subject and their subsequent learning.

Developing the skill of listening to a recording of yourself, evaluating it, then re-recording a revised version enables children to hear how altering tone and intonation can influence meaning. In our experience, most children enjoy talking and hearing their voices and those of their friends – and this method of communication remains crucial throughout life.

References

Primary National Strategy 2006
Summer term bulletin
http://www.standards.dfes.gov.uk/primary/features/primary/pns_sumbul/

Learning and teaching for dyslexic children
http://www.standards.dfes.gov.uk/primary/publications/inclusion/1170961/pns_incl1184-2005dyslexia_s1.pdf

Talking Tin Lids
<http://www.talkingproducts.com>

MP3 players
http://www.mini-mice.com/outer_6.php?osCsid=d5204808aa5d49f26c3638aaf9b399b5

Blackburn with Darwen E learning team
<http://www.elearningbwd.net>

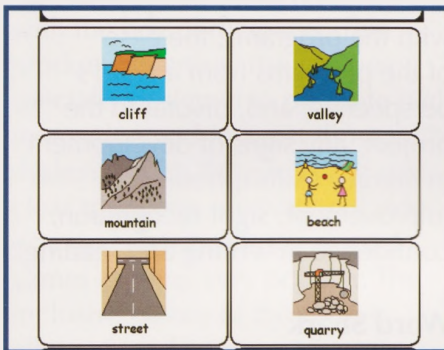
Symbol Resources Support Teaching

Emma Loynes, Widgit

Julie Williams, Learning Support Assistant, Fremington Primary School



“The software, Communicate: In Print 2, is very user friendly and it has made my job as a Learning Support Assistant far easier having such fantastic resources at the click of a button.”



Visit www.widgit.com to see the latest downloadable resources

The curriculum and thematic The Widgit symbol supported resources encourage and support learning in any environment, for any learner, no matter what their level of reading is. At Fremington Primary School pupils are already reaping the benefits.

After a short demonstration I immediately loved the symbol supported resources. All the Learning Support Assistants and most of the teachers at Fremington are now using them with the Communicate: In Print 2 software.

The symbol supported resources undoubtedly support our pupils' participation and involvement in communication, interaction and curriculum-related projects. The worksheets and ready-made activities enable me to create lesson plans that support Literacy and provide clear understanding and participation within a group situation.

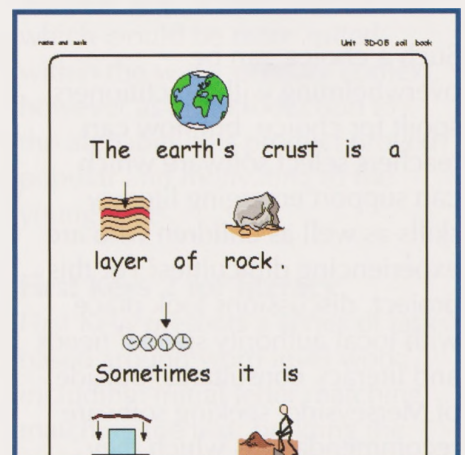
The symbol supported resources have helped teach many curriculum areas, particularly Science, Literacy and RE to children of different ages and abilities.

The school has recently gone on to purchase the Language Development Packs. The Learning Support Team's response was “Wow, these are fantastic.” The activities and worksheets are extremely user-friendly; the resources have made it much

easier for the staff to support struggling pupils.

Pupils at Fremington Primary love the colourful Rebus Symbols produced in Communicate: In Print 2 because they enable them to communicate with each other and share ideas before starting a project. The symbols help keep the pupils focused and the resources help make the learning fun. The symbols give confidence to pupils who have previously struggled with text alone and this means they are able to be fully involved in a lesson.

We used a Three Pigs activity to work at describing characters and using a storyboard to tell a story. Pupils had the opportunity to share ideas, complete a worksheet and then the whole class discussed what they had written down and completed the storyboard activity. This activity ensured that pupils had the chance to develop their vocabulary, and their communication skills by interacting with their small group.



ICT and literacy difficulties

Colin Hill KS 1 ICT coordinator Southport

With ICT becoming more prominent in schools, what impact can such technologies have on encouraging and supporting children who have difficulties in learning? This small scale project explored how ICT and a limited selection of software could impact on the performance of pupils who encounter literacy difficulties in one primary school in Merseyside, and how it supports emerging literacy skills and how this encourages inclusive practice in the classroom.

The abundance of Electronic Learning Credits (ELCs) available to schools in England and Wales has produced a plethora of software materials marketed to teachers claiming to support teaching and learning in all subject areas of the curriculum. Just searching the literacy section of one software provider reveals 782 literacy products available to support teachers across the primary age spectrum (www.pinkcowselect.com). Some products are duplicated across different Key Stages).

Such a choice can be overwhelming with practitioners spoilt for choice, but how can teachers select software which can support emerging literacy skills as well as children who are experiencing difficulties? For this project, discussions took place with local authority special needs and literacy consultants (outside of Merseyside) seeking software recommendations which they

felt would be inclusive in the classroom supporting pupils who are experiencing difficulties.

This article shows how a variety of software packages can support inclusion whilst supporting the individual needs of pupils.

This project explored the children's ability to recite the expected National Literacy Key Stage 1 High Frequency word list, along with the word list for Reception Aged children. http://www.standards.dfes.gov.uk/primary/publications/literacy/nls_framework/486193/919081 Children were tested. Each child followed the programme for six weeks. Following their interaction with the software the children were again tested on their knowledge of the High Frequency Words to measure for any progress.

The children identified for this project were those who had been experiencing literacy difficulties (reading and/or writing) aged 5 and 6 (Year 1), and were paired up with other children of the same age who could support the inclusion of the project.

The software programs used for this study were: Word Shark - version 3s (White Space Ltd); Tizzy's Toybox (Sherston Publishing); 2Create a Story (2Simple software); abc-CD (Sherston Publishing); FirstKeys2 to literacy (Logotron & Widgit Software); and Clicker 5 (Crick Software).

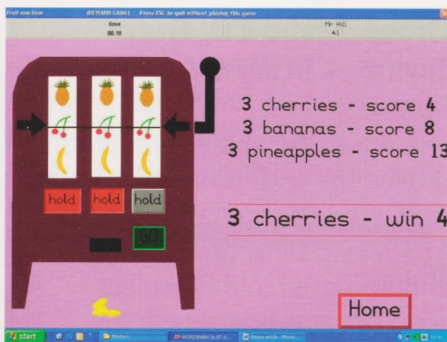
Children were grouped to use specific programs only during the project. The children who were encountering literacy difficulties ranged from those who were showing signs of a dyslexic nature; eye sight issues; children whose family background was causing emotional stress; a child with speech difficulties; and whose performance levels were below the expected levels as defined by the English National Curriculum.

When assessing the software, factors studied included: the children's engagement with the product; children's independence with the programs; the ease of the programs from a child's perspective; and, pivotal to the project, any signs of development in literacy skills (phonic improvement, sight recognition, confidence in writing and reading).

Word Shark

The first product explored was a clear favourite as far as the children were concerned. The interactive, independent, rewarding nature of the program ensured the attention of the pupils whilst they were engaged with the activities. From a teacher's perspective, Word Shark supports the teaching of High Frequency words, with an extensive directory of word lists which are broken down into the relevant year group and term for when it should be taught in line with the English National Literacy Strategy.

The games proved very popular, with the reward games proving a huge success, only being set upon successful completion of the activity. The reward games were totally irrelevant to the literacy based nature of the program, but provide a useful distraction and break from the literacy based activities.



The reward games (see above) do appear to be on a gambling nature, although the racing car game proved very popular with the boy participants. This product advertises itself as being specially designed to promote high motivation and to assist those with dyslexia. With this project, it was clear to see the motivational side was successful with the reward games proving very popular. The inclusive nature of the games allowed for the progression of pupils although, for this project, to be used over a longer period of time will allow further judgment on pupils progress.

Tizzy's Toybox

Arguably, this product is aimed at a slightly younger audience, as the pupils who explored this program were often heard commenting how 'babyish' the games were, although this clearly helped their confidence in the games as they achieved the games with relative ease.



The literacy based activities within the software are 'Picture Book', 'Opposites', 'Bears', and 'Rhyming Words'. The other games on the software encourage mathematical development. For very early learners, the 'Bears' program proved most productive, in that it made the children think about the initial sounds of words, clicking on the pictures that begin with a given sound.

The whole program allows for full independence for the child, with correct tasks resulting in a quirky, magical act from Tizzy. This product would suit Foundation Stage (Early Years) settings more than older primary classrooms due to the nature and style of the activities which appealed more to younger users.

2 Create A Story

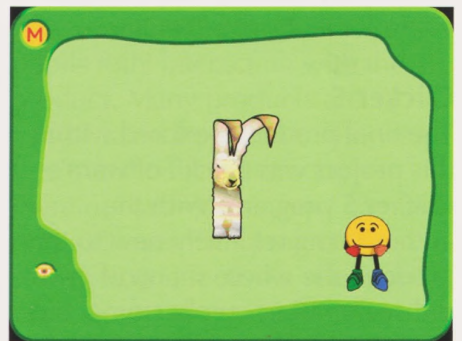
Another motivating program used for this study was this award winning product from the 2 Simple series. Having explained the product to the groups using an interactive whiteboard, the program was placed on the stand alone computers in the classroom allowing the children to interact with whenever they wished, within the structured play ethos. The ease of use of the software, along with the clear reward of a final product for the children proved incredibly popular, with the stand-alone computers being used by children of the setting constantly. Some of the story sequences created were

ambitious; some simple; but all showed a clear understanding of sequences. Some children worked collaboratively with peers, others went solo, but most were engaged, even those classified as have literacy difficulties had a go, with something to show at the end. This is explored later in the article.

abc-CD

This product is marketed for the Early Years (Age 3-5), containing activities based on letter shapes; letter sounds; and letter names.

The product is very useable for interactive whiteboards, and this was used to support whole class teaching in a reception class as part of a transition programme for pupils moving into Key Stage 1 (P1). The program develops the letter into an image of an example of a word starting with the sound, such as rabbit in this picture.



Although very good for emerging skills, this product does not take the next step in blending sounds, which would be more suited within the wider primary context, however as an introduction to the alphabet, this product proved popular and motivating to the young users.

First Keys 2 for literacy

First Keys presents a series of tasks based around word level work, including: initial letter matching; matching the text; building the text from memory; filling in gaps;

ICT and literacy difficulties

look cover spell; and spell from a picture. With 50 lists supplied with the software, there is also capacity for teachers to create their own lists.

The teachers' options allow practitioners to select the activities and lists they wish for pupils to work with from an easy to navigate menu.

The program allows the teacher to see how pupils have achieved with the task, although as pupils do not need to identify themselves to the program, it is difficult to monitor individual progress. The American female voice was also quite annoying, until I found 'Mike' who seemed more English in his use of the pronunciation! A very good feature of the program is the differentiation built within the lists available, supporting and challenging pupils at both ends of the literacy skills spectrum, again controllable by the teacher.

Clicker 5

The final product explored within this project was Crick Software's Clicker 5 program. With the author being relatively new to this product, the whole set up of grids did seem rather cumbersome, but was glad of the resources available on www.learninggrids.com.

Registered users have a variety of ready-made resources including a plethora of literacy activities. A variety of the resources from the website were used in the project, including 'story talk' (a sentence building activity), 'Jack and the Beanstalk' and 'Write a Ghost Story' (story writing activities).

The Research Project

For the research side of this project, children who were identified as having some literacy development difficulty were

invited to participate in (lunch time) sessions to 'play' on the computer programs over a six-week period. These children were in the early years of their schooling, either in Reception (P1), Year 1 (P2), or year 2 (P3). Parents were briefed and fully included in the project, being encouraged to talk to their children about the activities they had undertaken. The children were not required to take part in the project, being offered the chance to withdraw at any time, although this did not happen!

The children were allocated different programs which they would only use during the session:

Group 1: Word Shark, Clicker 5 & 2Create a story.

Group 2: abc-CD, Clicker 5 & 2Create a story.

Group 3: First Keys 2 to literacy, Clicker 5 & 2Create a Story.

Prior to the exposure and interactions with the programs, the children were tested on how many high frequency words they recognised on sight, using a Powerpoint presentation that changed every three seconds, with the researcher marking off the words they recognised as they slides progressed. The results of the initial test are recorded below.

Group 1 (Word Shark, Tizzy's Toybox, Clicker 5 & 2Create a story)

The children were thoroughly engaged by Word Shark. The incentive of the reward games proved to be a popular lure through the 'word' activity. In fact, the popularity of this game caused conflict between those who were not using the program, distracting them from the activity they were supposed to be doing! The program was set to engage

the children with words they had all failed with in the initial test, and it was clear to see they were improving with the set of words over the period of this study. The engagement of Word Shark was equal between the boys and the girls. In terms of engagement of 2Create a Story and Clicker 5, this will be explored later.

Group 2 (abc-CD, Tizzy's Toybox, Clicker 5 & 2Create a Story)

The use of the abc-CD program proved the least productive in this study. The program is marketed to 3-5 year olds, however the children used in this project soon became bored with the program, preferring to use the other programs available. As a practitioner, this would be a good program to use in whole-class or small group activities in Foundation Stage (Early Years) to embed knowledge of the alphabet.

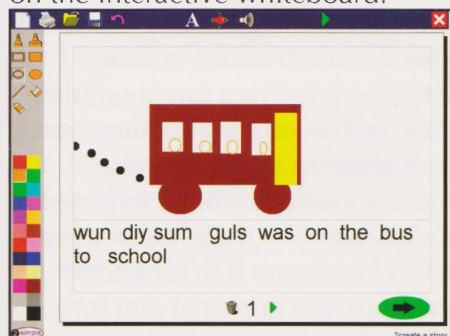
Group 3 (First Keys 2 to literacy, Tizzy's Toybox, Clicker 5 & 2Create a Story)

Again, this program was set up with words which all the children had failed with in the initial test. The different activities which encourage recall engaged the children, with the program encouraging collaborative work between the children to gain the correct answer.

2Create a Story

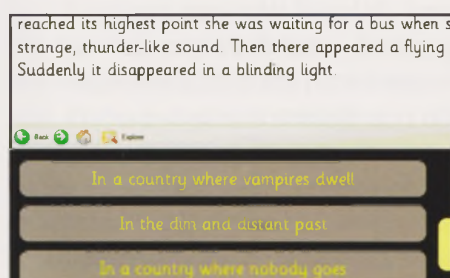
All three groups were exposed to 2Create a Story, being one of the programs freely available. As the program was previously modelled, the children soon became fully independent. The different levels of the program allow a basic and advanced level, with the basic level being modelled and selected for the children to encourage engagement.

The stories and creations became more adventurous with confidence and enjoyment increasing throughout the study. The program allows and encourages independence, with the only intervention being support to save their work. The example below shows one page of a story completed independently by one of the year one girls, following a school trip, which developed over five pages, with the program allowing the animation to move, much to the delight of her peers when she showed the final version on the interactive whiteboard.



Clicker 5

In contrast to 2Simple, the children were not as engaged with this program as it did not allow them to illustrate (although pictures can be inserted). However, with some of the activities, the children were able to build an impressive array of stories, with the options being stated for them. The program is capable of reading back the text to the child, which engaged and enthralled. The following example (taken from 'Write a Ghost Story') was completed by one of the year 2 girls, who was delighted to be able to print of the story and re-read to her class and family!



Tizzy's Toybox

The younger children within the study (the reception aged children) were very entertained with this program, although there was a curious fascination from the older children in the study.

Results of Research

Following the weeks of study had been completed, the children revisited the High Frequency Word program with the author, to explore if there was any evidence of advancement in their knowledge base:

Therefore, the average progression for the groups is:

Group 1 = 35.25%

Group 2 = 11.25%

Group 3 = 25.75%

This shows a clear improvement most effectively with group 1, who used Word Shark as well as Clicker 5, Tizzy's Toybox, and 2Create a Story.

Discussion of findings

As illustrated above, the group which were exposed to Word Shark gained more from the study, followed by the group who used First Keys 2 to Literacy, then the group exposed to abc-CD. It is not advocated that the abc-CD is not an effective use of software, more a case of not really being suited in this study. However, it does illustrate that if practitioners carefully select software there can be benefits to literacy development. In terms of usage, Word Shark was the most popular, heavily used program, which shows that the engaging nature of the software has many distinct benefits in the classroom. Although only used in an early years/Key Stage 1 setting for this study, the product extends into Key Stages 2 and 3 (P4-S2), although how effective the benefits

are here were not explored in this project.

First Keys 2 to literacy also proved popular, although more limited in the options available compared to Word Shark. However, the children were engaged, and a positive progression in the groups marks is clearly evident. The author likes the independence for the children with this product, and will use it as an independent activity in guided reading sessions of the Key Stage 1 classroom. It needs to be acknowledged that other classroom / home activities may have had an effect in developing the children in this study, but such limitations are difficult to quantify.

Conclusion

In making the decisions to purchase software to support children encountering literacy difficulties, practitioners need to fully evaluate the product with pupils fully interacting with the product. Many products are available on inspection, allowing free trials in the classroom, therefore taking away any gamble on purchases. This project has shown how effective a selection of programs are in developing children's literacy skills. Worked effectively with other positive, multi-sensory activities in the classroom, software programs clearly have a role to play in developing children's literacy skills, with technology advancing at such a rapid pace, it is important that practitioners allow opportunities for children to use ICT regularly as society is beginning to demand a sound knowledge in ICT skills, therefore such opportunities allow such skills to develop alongside literacy development.

Using ICT to improve memory skills

Dr Chris Singleton,

Senior Lecturer in Educational Psychology

University of Hull



Many children experience problems in remembering information, especially when they first start school. Research by Professor Susan Gathercole of the University of York has revealed that most children who encounter difficulties in learning have poor working memory skills. In the classroom this means they will have problems carrying out instructions and keeping their place in complex tasks. Important steps in processes are likely to be left out, with the result that the work is not done properly. In classroom activities where information needs to be held in short-term memory for a period of time during which some thinking has to be carried out, these children are likely to perform particularly badly. They are also poor at learning material such as spellings and multiplication tables by rote. This behaviour tends to attract the labels 'lazy', 'disobedient' or 'unintelligent', even though none of these descriptions may be appropriate. Although most children with low general ability have poor memory skills, some bright children also have poor memory skills. These pupils understand the material perfectly well, and with effort can

produce good class work, but they tend to come unstuck in tests and examinations where memory skills are at a premium.

Given the importance of memory in education it is surprising that comparatively little effort is devoted to helping children improve their memory skills. Recent research, however, shows that memory abilities can be improved, and the key to this is to help children develop appropriate strategies for learning.

Teachers sometimes assume that because children can recall holiday experiences in colourful detail but cannot remember spellings then their failure is not due to memory but to laziness. This is a misunderstanding because there are actually two different long-term memory systems. The first system is autobiographical memory, which is the store of memories of events we have personally experienced during our lives. As social animals we have evolved the ability to retain this type of information with little, if any, effort. Because we witness personal experiences directly and with all our senses, autobiographical memory is also a form of multisensory learning, which makes it very effective. The other type of memory is semantic memory, which is the store of factual knowledge and understanding that we acquire mainly through education. Memorising and recalling information stored in the semantic

system requires a lot of conscious effort, and most people find this hard. Because our brains have evolved to forget anything we don't need (to avoid overloading the system), unless we make a real effort to retain certain information it will inevitably be lost. We can hold a small amount of information (generally between about 5 and 9 items) in short-term memory for a brief period of time, but as soon as our attention is diverted to something else, that information will be forgotten unless we have made a conscious effort to commit it to long-term memory. The principal aim is to remember the information we want or need, and dispense with the rest, and the key to achieving this is for the child to develop the right strategies.

The ability to commit information to memory increases during childhood. But it is now well-accepted that the improvement seen in children's memory as they get older is not due to enlargement of memory capacity per se; rather it is due largely to advances in utilisation of strategies for memorisation and recall. Memory strategies are conscious and deliberate processes employed to increase memory efficiency, and children who use strategies generally (but not always) show better recall than children who do not. Before about five or six years of age children show little or no evidence of using memory strategies; indeed, it does not seem to occur to young children

that they should do anything to help them remember. From about age seven, however, children increasingly show spontaneous evidence of simple strategies when trying to remember information. Rehearsal (repeating information verbally to oneself) is usually the first strategy to with more complex strategies such as organisation (grouping information into conceptual categories) and elaboration (linking information by means of a story or visual images) generally emerging later. Organisation strategies rarely occur spontaneously until after age ten or eleven, and elaboration not until well into adolescence. Older children are not only better able to generate more complex strategies but they are also more proficient at selecting the most appropriate strategy for the task and making efficient use of it.

In a nutshell, therefore, the purpose of memory strategies is to organise information we need to learn, and to help us practise it so that when we need to recall the information we can do so readily. Getting something into memory is only half the story – we have to be able to get it out again when we need it. We have all been in the frustrating situation of being unable to recall a piece of information that we know is in our head somewhere – maybe a name, a particular word or perhaps a telephone or pin number. Later on, when we least expect it, the information pops into consciousness! The fact that we can recall the information proves that we have not forgotten it, but the problem was that we could not retrieve it when required. For children, especially when taking tests and exams, it is important to be able to retrieve information when it is

needed – it is no good recalling it after the exam has finished! There are two reasons why we cannot always retrieve information that is in our heads somewhere. The first is that information may not be organised very well, so the brain does not know what location to find it in (this is a bit like searching for socks in the cutlery drawer). Well organised information is much easier to remember than disorganised information. The second reason is that the means of accessing the information has not been sufficiently practised so the brain doesn't have a convenient route to the storage location (this is a bit like trying to walk a countryside path that few people have trod recently so it has become overgrown and difficult to follow).

The fact that spontaneous strategy generation and use follows a developmental sequence raises the question of the role of the teacher in this process. If memory strategies usually benefit children's learning, should the teacher simply wait the child's haphazard discovery of strategies, or should there be an explicit attempt to teach these strategies? Many research studies have shown that children's recall usually improves if they are given specific prompts that will aid retrieval of information. In general, training younger children to use an appropriate memory strategy (such as rehearsal) when learning has a positive benefit on their memory performance. Even the more complex strategies such as organisation and elaboration can be taught to children as young as five, usually with considerable success.

These findings, which have been widely replicated, suggest that teachers should be doing more

to promote memory strategy use in the primary stage, and that this could assist the learning of children who might otherwise struggle. However, children do not invariably make effective use of a strategy they have been taught or encouraged to employ, suggesting that the issues are rather more complex than might at first appear. Research on children's failure to utilise strategies they have been taught indicates that several factors are at work. Firstly, children need adequate amounts of practice in applying the strategies. At first children may show limited improvement as a result of having been taught a suitable strategy, but with increased amounts of practice, improvements in memory are seen. A second factor is interference between different strategies. Younger children may have difficulty in inhibiting a previously acquired (but possibly less effective) strategy. A third factor can be the amount of mental effort that must be expended to execute a new strategy. In younger children, particularly, it may simply be too taxing to cope with the task in hand as well as to remember the procedure that has been demonstrated to deal with the task. The main conclusions to be drawn from the research literature are that although memory strategy training – especially during the primary school years – is educationally worthwhile, it is important to provide the right conditions for it to be effective. The most critical factor seems to be the provision of sufficient practice for a newly acquired strategy to be properly consolidated into the child's repertoire. Without adequate practice, many children will find that the application of the new strategy takes up too much mental effort, and they are likely

Using ICT to improve memory skills

to give up before experiencing the benefits of the strategy.

In the classroom, in the face of all the other demands of the curriculum, it is a real challenge for teachers to provide the requisite instruction in memory strategies, let alone to ensure that each child obtains sufficient practice to consolidate their new skills. The amount of practice children require will differ from individual to individual, so it will be necessary to monitor each child's progress closely and vary the difficulty of the activity to maintain the right amount of challenge for optimal learning. This is an ideal role for computer-assisted learning, where the delivery of large amounts of practice coupled with interactive feedback and adaptive monitoring of performance are well-established techniques.

Among the programs currently available specifically for developing memory skills, there are two clear leaders in the market. The first is *Mastering Memory*, published by CALSC. This program has been available for about ten years and comprises a database of visual and auditory stimulus materials (such as colours, shapes, numbers, letters, signs and symbols), which can be displayed by the computer. The teacher has a high degree of control over these materials and uses them in memory exercises given to the pupil. However, the teacher has to provide instruction in memory strategies (which are described in the accompanying manual), so the program is not suitable for use without a high level of teacher involvement. There are two versions of *Mastering Memory*, one for primary age children and one for secondary-age students

and adults (for more information and to watch an on-line demo visit www.masteringmemory.co.uk).



The other program is *Memory Booster*, an adventure game designed for children aged four to eleven plus, published by Lucid Research Ltd, the company that produces the well-known diagnostic assessment programs *Lucid CoPS* (Cognitive Profiling System) and *LASS*. Unlike *Mastering Memory*, *Memory Booster* does incorporate tutorials in various memory strategies, so can be used independent of the teacher, either in school or at home. The scenario of the program is that a character called Pooter, the Master Computer (voice artist Brian Blessed), has lost his memory, and the child has to engage in various memory activities in order to earn points that will give Pooter some new memory. The program, which incorporates attractive graphics, digitized speech and cartoon rewards, also provides tutorials in four basic memory strategies: rehearsal, visualisation, elaboration and conceptual grouping. The memory tasks involve the child remembering the names of items and then selecting those items from a visual array in which there are a number of distracter items. The program comprises a number of levels of increasing difficulty and complexity, and for each level the child is shown and encouraged

to use one of the strategies, the tutorials for which child can revisit at any time. Children can print out certificates of achievement and at any time the teacher can review the child's progress on the program.

Memory Booster is available in a standard edition suitable for class use, which provides the teacher with various controls over the parameters of the game, including difficulty, amount of practice and frequency of rewards, and allows up to 28 registered players. The program is also available in a cheaper home edition, which allows a maximum of four players and which has fewer features. Both versions will run in automatic mode, in which progress within and between the levels is dependent on the child's performance. In this mode the program employs an adaptive algorithm that aims to provide the optimum challenge in order to motivate the child. This means that children can be left to work with the program at their own pace, freeing up teacher time and also making a good program to use at home. For more information visit www.memory-booster.com, which also contains some useful information about memory and from where a free demo CD can be downloaded or ordered.

We have carried out several research studies using *Memory Booster*, two of which, carried out in different primary schools, will be reported here. The first study examined the effects of memory training on children aged 9 – 11 years using *Memory Booster* in comparison with an equivalent amount of memory activities that were teacher-led. The results showed that the children using *Memory Booster*

improved significantly in memory skills (as indicated by standardised psychometric tests) over the four-week period of the study, whereas the children who participated in teacher-led memory games showed no improvement. I should add that this result does not mean that the teacher was at fault, but more likely reflects the fact that the games the teacher involved the children in (pelmanism, etc.) did not effectively target each individual child's need for strategy tuition and adaptive practice to consolidate acquisition of those strategies.

The second study looked at whether intelligence or age made any difference to the benefits gained from using Memory Booster, because relationship between intelligence and children's ability to utilise memory strategies is currently unclear. Although children with higher IQs generally remember things better than children with lower IQs, and brighter children usually perform better on strategic memory tasks than other children, there is some evidence that strategy instruction can make a much bigger difference to the memorisation ability of children who are not of high IQ. The reasons for this may be that brighter children have a more extensive knowledge base and usually process information faster than less bright children. These factors may make strategy use less important for bright children: in other words, their high IQ may compensate to some extent for their poor memory. It was therefore pertinent to investigate whether, amongst the children who used Memory Booster, those with higher IQs benefited more, or less, or to the same extent as children with lower IQs. Children age 7–11 years were given

training using Memory Booster for 10 minutes each session, three times per week, for a total of five weeks. The results showed that the average improvement in memory performance was 17.8%, with more than two-thirds of the pupils increasing their memory performance by more than 10% during the training period, and over half increasing their memory performance by more than 20%. Although the initial memory score was found to be significantly correlated with age (older children scoring higher), the percentage improvement in memory performance was not found to be significantly correlated with age, gender, intelligence or initial memory score. These findings suggest that all children, regardless of age, gender, IQ or initial memory performance, can benefit from using the Memory Booster program. Children say they enjoy the program and teachers have commented that it is a low-cost learning tool that they believe helps to develop children's concentration and attention as well as boosting memory abilities. Other research studies with Memory Booster have shown equally positive results, and have been submitted for publication in scientific journals.

Although most children begin to discover memory strategies sometime during the secondary stage, some children (including those with dyslexia) lag behind in memory development. There is a strong case to be made for teaching children about memory strategies at the primary stage (or as soon as possible thereafter), when they will reap the benefits throughout their education. Pupils should be encouraged to try different strategies and find what works best for them. Tony

Buzan's book *Use your memory* (BBC Active) remains one of the best compendium of techniques on this. The website www.happychild.org.uk/acc/tpr/mry/indexfaq.htm contains a wealth of suggestions about memory strategies as well as mnemonics (memory aids) for learning specific information (such as the Kings and Queens of England). Structure and organisation of material to be learned is also crucial, which is why mind-mapping is such a useful technique for all children to learn. The website www.dyslexic.com gives a useful comparison of different computer-based mind-mapping tools.

Despite the obvious benefits of schools using programs such as Memory Booster, I would hasten to add that I am not suggesting that computer-assisted learning is the only way in which teachers should try to help pupils improve their memory abilities. There are many other types of classroom activities, including memory games and competitions, which can raise children's awareness and understanding of memory processes and give opportunities for valuable practice that will enhance skills of learning and recall. However, the particular benefits of ICT in this context are that it makes the pupil relatively independent of the teacher and facilitates the delivery of large amounts of well-structured practice necessary for effective skill development. The child's memory abilities can therefore continue to grow at times when, and in places where, the teacher cannot be present.

A Disgusting Week in the Life of a Horrible Teenager!

Pete Wells

Sunderland City Learning Centre

Pete was recently head of the sensory education department at Portland School in Sunderland where he helped transform the curriculum using ICT to produce a range of exciting, age appropriate resources which have subsequently been used internationally.

Pete was recently awarded Becta's ICT Practitioner of the Year award 2006 in the category of Inclusion for his work promoting fun and stimulating resources for pupils with learning difficulties.

Vicky Pollard, Catherine Tate's Lauren, Kevin and Perry and Pete Wells; all of these individuals have one thing in common – that they are, or were, horrible, unpleasant and gloriously offensive teenagers.

In the halcyon days of my youth, my two main goals in life were to a) to get into as much trouble as possible and b) to offend and upset as many adults as I could. Unfortunately, as an adult this compulsion is still with me and seems to be magnified whenever my inbuilt 'headteacher detector' is activated!

As class teacher of motley bunch of teenage pupils with profound and multiple learning difficulties in Sunderland, I was thrilled that so many of my pupils obviously had the same mischievous outlook as me. Despite their obvious limitations, I was constantly delighted by their wicked personalities and ever more inventive ways to wind up those around them. As we all know, students with such complex needs require assistance to do most things in life, so I decided it was only fair to present a curriculum that would help my teenage learners to be as offensive and unpleasant as any other ASBO laden, teenage hoodie around!

The needs of my students necessitate a curriculum that is akin to a plate spinning juggling act. My class consisted of students that were primarily experiential learners who benefited greatly

from a sensory-based curriculum which is balanced with physiotherapy requirements, medical needs, cognitive tasks, communication strategies and hydrotherapy programmes which we try to tie into the national curriculum and any other strategies thrown our way. Most importantly though, the curriculum needs to be fun, otherwise nobody will want to learn! So sit back, gentle reader, as I take you through a week in the school life of one of my pupils...

The week begins with my very favourite lesson – a sensory story. Sensory stories are a lovely way of allowing pupils with profound difficulties (or any pupil for that matter) to access literacy but unfortunately, there are limited numbers of great or appropriately horrible, teen-friendly sensory stories out there. For this reason, the first stage in my plan to provide a truly horrible curriculum was to produce my own collection of hideous, offensive stories. Before long we had a stomach churning collection of tales with such wonderful titles as Gobbin Hood and his Merry Phlegm, Norbert the Green Nosed Reindeer, The Head-lice Horseman and Sir Pranceabout and Slapunzal. Rather sneakily, I made each of these stories into switch accessible, ICT-based talking books which allow my pupils to 'tell' them, therefore exonerating me from all responsibility!



Here's how the session works. The pupils are put into their various physio positions, ideally within our darkened sensory studio, and the cover 'page' of our story is projected to fill the wall using a multimedia projector. Pupil A, we'll call her Shazza, presses the switch which turns the page. The page contains an animated slide and the first part of the story which takes the form of an audible two-line poem. Each set of lines also have an associated sensory stimulus – something to touch, smell, taste, listen to or look at. Shazza has the lines re-read to her and experiences the stimulus; next we turn to Pupil B, we'll call him Bazza, who also has the lines read to him and experiences the stimulus. We go round the class reading each pupil the first part and allowing them to experience the stimulus. After that, it'll be Bazza's turn to press the switch to tell the next part of the story (which again, everyone will experience in turn).

There are many reasons for this approach. Firstly, each pupil gets to 'experience' the story at his or her own level – this works with pupils at all cognitive stages from those who completely understand the story from the verbal and visual cues to those who may not be as receptive to my language but get a great deal of stimulation from my sensory props. It's great for differentiation too – for example, one pupil may be working on tracking an object where as others may be working on vocalising,

reaching out, overcoming tactile defensiveness and so on. Though each student is given the same line in the story, how the prop is used with them can differ significantly. The second reason for this approach is to reinforce turn taking, increase anticipation and emphasize that the students are part of a cohesive group. A further benefit of this approach is that each pupil gets lots of attention which reinforces their sense of identity as well as, one would hope, upping their self esteem a notch or two.

As for pressing the switch to tell the story, there are several reasons for this too. Firstly, it reinforces concepts of cause and effect; pressing the switch causes a huge visual change as the image projected on the wall changes and also leads to an audible, often disgusting, reward – cool! Secondly, being able to tell the story gives the pupils some control, very empowering for those who often need almost everything done for them. As the content of my stories is often so offensive, the students in the class are in charge of their behaviour too, it's great when a pupil is pressing a switch to make a lead character spit or vomit, just as our head teacher is showing a group of visiting dignitaries around our classroom!

The stories are designed to fit with the literacy strategy and are easily delivered as a three part lesson. The introduction involves getting the students into relevant positions

A Disgusting Week in the Life of a Horrible Teenager!

Teenagers!

Horrible!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!

Horrible! Disgusting! Gross!



and giving sensory cues to indicate that this is literacy session and the main part of the session is the story itself and the differentiated tasks within. The final sensory stimulus is always designed to accommodate a plenary, for example, a massage where staff can discuss the story with the student or a song.

My horrible stories can be downloaded from www.petewells.co.uk. I must say I'm chuffed with the response having had letters of appreciation from across the country and as far as New Zealand! I hope people enjoy (and are disgusted) by them! From my sensory story I plan all of my disgusting lessons for the week, the first of which (if our stomachs can cope) is food technology. What we make depends on which story we experienced that day, for example, after Gobbin Hood (see box) we may make green jelly, target biscuits or Scotch Broth. This is a great way of reinforcing the story in a sensory way, again using lots of cool technology to allow the pupils to make, as independently as possible, our chosen dish.

And so the week goes on. Bazza and Shazza's numeracy lesson again reflects the story of the week, generally focusing on fun but simple sensory games and boisterous songs. Some examples include playing 'Nessie Attack' a variant on musical statues where

the students press a timed switch to start some Highland music, while the music plays a stuffed Nessie toy sniffs the students in turn, when the music stops... he attacks and that person is out of the game! Similarly, when doing Gobbin Hood we may fire soggy spit balls at coloured targets or play a Medieval dice game where the students throw a large coloured die with each colour representing a different Medieval sensory stimuli – some nice and some not so nice!

Similarly, our science lesson would be a fusion of all things horrible. If the week's story was Sydney and the Bogey Man we may investigate properties of materials by looking at bogies in their three natural states - well, we'd investigate lime iced lollies and a lime jelly with nice smelling steam, in it's liquid form and when set as a solid.

Our art, music and PE lessons lend themselves wonderfully to horrible stories. We could work on an artistic, tactile Nessie, each of his scales having a different look or feel, or make some cool, tactile Nessie sock puppets. In music we may take part in a ceilidh or play along with homemade instruments to a disgusting song. Our PE session is wonderfully inclusive, with students from many classes joining us for a themed lesson - a variety of wheelchair races and highland games for example!

A buzzword at present is 'screenagers', a funky word used

to highlight the fact that more and more of our teenagers are learning through the use of mind boggling ICT such as computers, videos and podcasts. My screenagers are certainly no different; in fact they are all proficient film makers and have won awards for their efforts. This is achieved by using a cheap digital video camera linked to a switch to make stop-motion animation films based on our favourite sensory stories. This is a wonderful sensory project which involves the students making delightfully gooey salt dough figures and props, painting their characters and sets, using a switch to capture frames of animation and as well as stretching their limbs to move their characters.



Not only are my screenagers talented film makers but they're also film stars in their own right. A fantastic addition to any school is a Chromakey screen which allows students to be superimposed anywhere in the world or beyond. See elsewhere in this magazine for more on this exciting resource.

After such a busy week of fun and revolting frivolity, my teens, and poor staff, are often absolutely

exhausted. For this reason, Friday afternoons are body awareness sessions. These much needed chill out afternoons concentrated on massage, sensory beach parties and my favourite, 'terrible Tac Pac!' Tac Pac is a brilliant activity which works on the premise that the skin is the largest sensory organ. Music is played with an associated tactile stimulus which is applied to the student, for example, during a nice breezy piece of music we may fan the pupils, or lightly 'chop' them with wooden spatulas during a piece of music with a beat. While this sounds very strange (and somewhat illegal!) I can assure you that the sessions are exceptionally effective with the students showing great anticipation, enjoyment and recognition during the session. Of course, as we strive to be offensive teenagers, we have made our own tac pac activities, yet again reflecting the story of the week to further reinforce it. As I am certainly no musician (I'm a Vic Reeves style pub singer at best) I turn to the world wide web to help me find fitting music. The internet is an amazing resource where it is relatively easy to find all kinds of free, legal, appropriate music that can be used for such sessions (it has to be said that some of the commercial tac pac music has aged somewhat and is sometimes not appreciated by my Arctic Monkeys or Justin Timberlake loving teens!)

If you've made it this far without contacting the authorities then I salute you! As my teens approach chavdom with aplomb I hope you can appreciate the appropriateness and sensitivity that the horrible curriculum offers. We certainly haven't thrown the baby out with the bath water – all individual programmes are in place and followed consistently, all needs are catered for sensitively, repetition and consistency is very much in evidence but this is done in a way that is lively, appropriate and never ever demeaning or insulting to my students. There may be some still reading who are quite rightly disgusted at the shocking behaviour going on in my classroom; I hope so, my students will be thrilled!



ICT, multimedia and access to literacy

Richard Walter

Meldreth Manor School

Richard Walter is a teacher and the ICT co-ordinator at Meldreth Manor School, a Scope school near Cambridge. Meldreth Manor is a school for students with cerebral palsy, profound and multiple learning difficulties and sensory impairments including visual and perceptual difficulties.

Communication and interaction form the basis of teaching and learning for pupils who have severe, complex and multiple learning difficulties. Access to literacy can form an important part of that learning.

What is literacy for students with complex learning difficulties?

The students at Meldreth Manor school are working mostly within the early P levels (P1 to P3). The following is a summary of the early P levels taken from the QCA site

<http://www.qca.org.uk/8798.html>
Our students have no formal reading or writing skills, so interaction with a set language structure (in literacy/story form) is mainly object and event based, incorporating drama and music. Accessing text (even in symbolic form) is less important than physical interaction within a story framework.

However the use of a structured narrative in a story is important; having a story structure is part of what delineates a story from general communication.

Literacy for our students involves elements of

- Attention and reaction
- Recall and anticipation.
- Purposeful behaviour.
- Interest and excitement.
- Feeling contrasting moods.

- Engagement, enjoyment and motivation.
- Sensory exploration.
- Movement and physical engagement.

In this article I will outline how I provide access to stories for our students and look at some of the latest technology and software that I use to support the development of literacy and interaction. Multimedia can be used to enhance and extend the interaction between pupils and staff in a story environment.

ICT support for stories and literacy

ICT can be used to enhance access to literacy for pupils with profound and multiple learning difficulties in several different ways.

Story telling can be supported and enhanced by using

- A multimedia version of the story

Level	EARLY DEVELOPMENT
P1	Beginning to show sensory awareness in relation to a range of people, objects, and materials in everyday contexts. Show reflex responses to sensory stimuli e.g. startle response.
P2	Perform some actions using trial and error and show reactive responses to familiar people and objects, such as reaching and holding objects, smiling and turning to familiar voices. Make sounds or gestures to express simple needs, wants or feelings in response to their immediate environment e.g. protesting or requesting, using facial expression to enhance meaning.
P3	Show anticipation in response to familiar people, routines, activities and actions, and respond appropriately to them. Explore or manipulate objects, toys or other equipment. Are able to communicate simple choices, likes and dislikes. Can communicate using different tones and sounds and use some vocalisation and/or gestures to communicate.

- Projected images from the story
- Playing sound effects from the story
- Playing music connected to the story
- Control of lights, projector wheels and other devices to illustrate the story.
- Using switches, overlay board and touch screen to access and control the multimedia

Multimedia stories can also be supported by a range of other resources:

- The use of real objects linked to the story – textures, colours, objects
- The use of symbols, text and picture sheets
- Sounds to illustrate elements and characters from the story
- The use of rhythm, call and response, percussion
- A repeated chorus or phrase – perhaps using individuals vocas (voice output communication aids)
- The use of movement to highlight the interactions in the story
- Use of switches to control additional devices (music/lights/fans special effects)
- Use of costumes and props

Human interaction in literacy and storytelling is extremely important, especially for students with complex learning difficulties. Multimedia and other props are used to enhance and extend

interaction between students and the staff and the story.

Which stories?

Choosing a suitable story for use as a literacy aid with our pupils is probably one of the most difficult tasks. I have found the most successful stories have:-

- Content that is rich in language and interaction.
(Beowulf, Shakespeare, classic texts, and some ethnic stories can all be adapted well)
- Age and experience appropriate so our pupils can understand some of the primary interactions in the story.
- An obvious structure, simple repeated language, and clear movement opportunities.
- Linked activities that are easy to create to extend the storytelling.

I do find it difficult to use some of the formal reading scheme books as the basis of these interactional stories- there is an obvious difference in narrative stories and literacy designed to develop independent reading. I prefer to choose from a range of picture books including classic texts such as Beowulf and Shakespeare to create the multimedia stories; books that offer sufficient opportunities for simple interaction. Some students can also input into creating stories themselves, perhaps using rebus cubes, or choosing from story options.

I rarely use a multimedia talking book as a full story, I tend to use elements from it to develop the interaction, these might just be the pictures, sound effects, chants or music.

Using a simple action script to detail the activities within the interactive story can help staff and students to join in. It can especially important to detail the role of movement within the story.

The obvious difficulty with providing age and experience appropriate literature for our students is that there isn't much of it commercially available, which is one of the main reasons we create our own multimedia stories using multimedia authoring software such as Powerpoint from Microsoft and Opus from Digital workshop. This ensures that we can use the topics, language, and sounds that our pupils will respond to. It also allows us to create the stories around the students themselves

Multimedia stories on the computer

We have transferred several stories onto the computer using multimedia authoring software (PowerPoint ,Opus and Macromedia flash) in addition to using multimedia stories from the web or cd roms (see the resources list at the end).

Using PowerPoint and Opus you can incorporate pictures, text, symbols, music, speech, and animation into interactive

ICT, multimedia and access to literacy

multimedia talking stories.

Powerpoint can be controlled by a single switch; Opus can be operated by multiple switches or an overlay board.

An example of using ICT and multimedia with the story "Have you seen the crocodile?"

This is a story written by Colin West that we have converted into a range of multimedia, and into an action script. There is a PowerPoint version that can be accessed from a single switch, a version created in Opus that uses 2 switches or an overlay board, there are musical themes and songs associated with the story and there are a range of physical and character props. Additionally the students all have suitable recorded messages and sound effects on their Vocas. The multimedia is usually shown using a full screen computer projector. Students can access the story, reading the story and turning the pages with their individual switches.

The action script for the story

For all our stories we create an action script that staff and students can follow to enhance the interactions. The action script informs the participants of their role in the story/drama (what to do and how to respond).

The action script for the story 'Have you seen the crocodile'

- Each character introduces themselves and plays their own sound and music theme.
- The parrot goes up to each character in turn and asks

"Have you seen the crocodile?"

- Each character in turn replies "No, I haven't seen the crocodile"
- Sounds of the crocodile play in the background (increasingly loudly)
- Finally the Parrot approaches and asks the crocodile who replies "Yes I've seen the crocodile"
- A chase ensues with the crocodile chasing and capturing each of the characters (a game of tag with suitable "chase" music)

An important part of this story is the role of movement. We have found it especially important to incorporate obvious movements in our stories. Most of our students are not independently mobile and moving can form a very important part of their learning. I have found that stories presented in this way are highly motivating for our pupils and can encourage progress in the basic elements of literacy.

Have you seen the crocodile is written by Colin West produced by Walker Books Ltd.
<http://www.walkerbooks.co.uk/>

PowerPoint is the presentation authoring program from Microsoft
<http://office.microsoft.com>

Opus is the multimedia authoring program from Digital Workshop
<http://www.digitalworkshop.com/>

Flash is the interactive web site authoring program from Adobe
<http://www.adobe.com/products/flash>

Some online resources
You can download stories from the web that can then be used for interactive storytelling:
<http://www.2simple.com/stories/>
<http://www.bulaja.com/fairytales/>
<http://www.magickeys.com/books/>
<http://www.flashplayer.com/music/thenewcatcameback.html>
http://www.ability.org.uk/kids_and_teens_online_stories.htm
<http://www.magickeys.com/books/>
http://www.checkthemap.org/links/fun_sites/

How to create talking stories in Powerpoint (97/2000), Clicker 4 and Hyperstudio
www.ace-centre.org.uk
How to create talking stories in Opus presenter, and Powerpoint XP
<http://atschool.eduweb.co.uk/meldreth/textandinfo/Powerp/Powp.htm>

Some example talking stories
<http://www.priorywoods.middlesbrough.sch.uk/resources/books.htm>

The example multimedia programs of "Have You Seen the Crocodile?" the associated music and the action script can be downloaded from
<http://atschool.eduweb.co.uk/meldreth/textandinfo/Powerp/Powp.htm>

Order Form

	Price	Quantity	Total
Computer Education			
Issue 113 Summer 2006	Members		
Issue 112 Spring 2006	£10		
Issue 111 Autumn 2006	£10		
Issue 110 Summer 2005	£10		
Issue 109 Spring 2005	£10		
Issue 108 Autumn 2004	£5		
Issue 107 Summer 2004	£5		
Primary Focus			
Primary Focus on Interactive Teaching Technologies	Members		
Primary Focus on Art and Design and Design Technology	£10		
Primary Focus on NAACE Online Resources	£10		
Primary Focus on Creativity and Challenge	£10		
Primary Focus on Geography with CD	£10		
Primary Focus on Citizenship	£5		
Primary Focus on Embedding ICT in Primary Practice	£5		
Primary Focus on New Literacies	£5		
The Teachers Guide to Copyright The Internet and the Classroom Teacher	£3.50 in p&p		
Total Cost			

Please send completed order form and cheque or provide invoicing details to:
 The Publications Manager, Naace, PO Box 6511, Nottingham, NG11 8TN
 Make cheques payable to 'Naace'. (Publications are VAT exempt)

Name Invoice to:
 Address

 Phone Invoice Dept Tel No:

I enclose a cheque

I enclose invoicing details and a Purchase Order

Office Use

£	<input type="checkbox"/>
---	--------------------------



Naace

Advancing education through ICT

Naace
PO Box 6511
Nottingham
NG11 8TN

Tel: 0870 240 0480
Fax: 0870 241 4115
Email: office@naace.org.uk
web: www.naace.org.uk