

HOW I USE MULTI-MEDIA

READ THIS IF YOU

- ARE A TECHNOPHILE OR A TECHNOPHOBE
- NEED MORE OPTIONS FOR VISUAL LEARNING
- WANT TO ADD A MOTIVATING TOOL TO YOUR BOX

RESEARCH EVIDENCE GATHERED BY THE BRITISH EDUCATIONAL COMMUNICATIONS AND TECHNOLOGY AGENCY (BECTA, 2003) SUGGESTS THAT INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ENABLES GREATER LEARNER CUSTOMISATION, INDEPENDENCE AND AUTONOMY, UNLOCKS HIDDEN POTENTIAL FOR THOSE WITH COMMUNICATION DIFFICULTIES, AND PROVIDES A WAY OF DEMONSTRATING ACHIEVEMENT THAT MAY NOT OTHERWISE BE POSSIBLE. IT IS PERHAPS SURPRISING, THEREFORE, THAT COMMUNICATING QUALITY 3 (RCSLT, 2006) HAS LITTLE TO SAY ON THE SUBJECT - BUT THE WORK REPORTED BY OUR CONTRIBUTORS HERE MAKES IT CLEAR THAT SPEECH AND LANGUAGE THERAPISTS HAVE A SIGNIFICANT ROLE TO PLAY IN EXPLORING AND EXPLOITING THE POTENTIAL OF TECHNOLOGY AS A THERAPY AND TEACHING TOOL.

References

Becta (2003) *What the research says about ICT supporting special educational needs (SEN) and inclusion*. Available at: www.becta.org.uk/page_documents/research/wtrts_ictsupport.pdf (Accessed: 12 October 2006).
RCSLT (2006) *Communicating Quality 3*. London: Royal College of Speech & Language Therapists.

MULTI-MEDIA TOOLS (1)
INTERACTIVE WHITEBOARDS: THE LONG AND THE SHORT OF IT

MULTI-MEDIA TOOLS (2)
RESEARCH THAT HAD ITS COMPENSATIONS

PRACTICAL POINTS: MULTI-MEDIA TOOLS

1. HAVE A COLLABORATIVE APPROACH AND SHARED VISION
2. INVEST TIME IN FAMILIARISATION AND PREPARATION
3. STRUCTURE ASSESSMENT TO ENSURE FUNCTIONAL PROGRESS CAN BE REFLECTED
4. INCLUDE COLOUR CODING, SYMBOLS AND ANIMATIONS AS APPROPRIATE
5. ENSURE INTERVENTION IS OF SUFFICIENT INTENSITY AND DURATION TO BE EFFECTIVE
6. CONSIDER BOTH SKILL LEARNING AND ANY COMPENSATORY VALUE
7. OFFER IN ADDITION TO TRADITIONAL APPROACHES THAT WORK
8. ENJOY!

HOW I (1):

Interactive whiteboards: the long and the short of it

IN DESCRIBING THEIR USE OF INTERACTIVE WHITEBOARD TECHNOLOGY AND SOFTWARE AS A TOOL FOR TEACHING ADJECTIVES, LEONA COOK AND KERRY TRIM DEMONSTRATE HOW STRONG COLLABORATION, A FOCUS ON EFFECTIVENESS AND EXCELLENT TECHNICAL SUPPORT HAVE HELPED ENSURE THEIR LANGUAGE PROVISION IS EVERGREEN.

We have frequently heard interactive whiteboards hailed as the future of teaching, but how far has their potential really been explored within speech and language therapy? With this in mind, our team at the Evergreen Centre set out to develop a project that would investigate the benefits of whiteboard technology as one of the teaching tools in the development of children's understanding and use of adjectives.

Our three-stage project involved:

1. pre-testing nine children on our assessment of adjectives,
2. teaching and therapeutic input, then
3. post-testing on the same assessment three months later.

The results were promising as most children improved in their ability to match a spoken adjective to a picture and use it at single word level.

From little acorns...

The Evergreen Centre opened in February 2006 in purpose-built accommodation at the heart of a mainstream primary school. The centre has an allocation of 32 places for children with statements for speech and language disorder. The centre is staffed by a dedicated team consisting of a centre manager, two speech and language therapists, three specialist teachers, ten specialist learning support assistants and a part-time personal assistant.

A provision for language needs has existed on the school site since the 1980's. The provision has a turbulent history, having been dogged by high staff turnover, inap-

propriate placements and a two year period of 'special measures'. Inadequate accommodation in dilapidated wooden huts further contributed to a growing malaise.

From this crisis point emerged a joint determination to turn the provision into a centre of excellence. Collaborative working between the newly appointed headteacher, speech and language therapy manager, school governors and the local education authority led to the formation of a detailed action plan supported by substantial financial backing.

In addition to funding for new accommodation, the school was included in an authority-wide project involving interactive whiteboard technology. (Connected to a digital projector and a computer, an interactive whiteboard functions like a high-tech, touch-sensitive blackboard. The difference is that it can be used to show video clips, software and resources from the internet to groups, whose members can all contribute to what is on the screen.) We were furnished with three interactive whiteboards and associated software for the new classrooms, and asked to devise a relevant research project, as this technology is still relatively new and its effectiveness under-researched (Becta, 2003). We decided to investigate the potential impact of whiteboard use on the children's adjectival development.

Sowing the seed...

Armed with the financial and advisory backing of Medway Local Education Authority, we met with our Medway Information and Communications Technology (ICT) consultant to decide on a focus for the project. A clear action plan with timescales and resources was agreed, with the whole project to run for an academic year. It was important to us that our focus for the project was relevant across the year groups and could eventually be made accessible to other schools in the area. Initial training was provided by our ICT consultant in using our interactive whiteboards with ACTIVprimary and Clicker 5 software.

ACTIVprimary software is used in conjunction with the Promethean ACTIVboard, offering users a wide range of functions. For this article, we are only referring to those features we generally applied. Essentially these included:

TOOLS

Figure 1 Pupil Assessment Grid

Pupil Name:		Class:							
Date of Birth:		N.C. Year Group:							
Date of initial assessment:		Target set:							
Date of end assessment:		Target met?							
Level		RECEPTIVE		EXPRESSIVE		PHRASE		SENTENCE	
		pre	post	pre	post	pre	post	pre	post
1	Big								
	Happy								
	Noisy								
	Heavy								
2	Cold								
	Empty								
	Small								
	Fast								
3	Tall								
	Thin								
	Frightened								
	Long								

Assessment Stages:
 1 RECEPTIVE LEVEL Child is given a choice of 3 pictures. "Show me."
 2 EXPRESSIVE LEVEL Verbal sentence completion. "The dress is"
 3 NOUN PHRASE LEVEL Adjective followed by noun, eg. "Dirty shirt"
 4 SENTENCE LEVEL Noun-verb-adjective-noun, eg. "The man is riding the big bike."

N.B. Phrase level and sentence level assessments can both be supported with colour coded prompt cards.
 Warren Wood Community Primary School and Inclusive Provision
 Interactive Whiteboard Project. Based on Ann Locke's 'Living Language'



Leona Cook and Kerry Trim

- customised activities which could be saved
 - 'drag and drop' for sorting pictures (big / not big activities, for example)
 - spotlight tool for slowly revealing pictures
 - attachment of sounds to pictures
 - writing tool, and
 - insertion of complex pictures and story characters.
- Clicker 5 is a writing-support tool that allows 'writing' with whole words, phrases or pictures. Users are able to hear words in spoken form, illustrate words using pictures, attach sounds to words / pictures and animate writing for story-work.

The saplings...

Although all our children at the provision were included in the project, due to time constraints we have selected one class for analysis of the results. These nine children were aged between 5 and 7 years at the time of pre-testing (April 2006) and post-testing (July 2006). All these children have a variety of speech and language disorders, including impoverished use of descriptive language. We feel adjectives are particularly vital for language and learning as they provide more specific information in a sentence. Further, within an educational context, children are expected to understand and use many adjectival concepts, for example those of quantity and size.

The project grows...

For assessment design, we began with identification of core adjectival vocabulary that could be clearly represented by pictures. Our choices were based on the

concept levels as identified in Concept Consolidation (Woods, 1992). We organised words into three levels according to developmental acquisition:
 Level One – big, happy, noisy, heavy;
 Level Two – cold, empty, small, fast;
 Level Three – tall, thin, frightened, long.

We then designed a computer-based assessment using the Clicker 5 programme, selecting pictures from Clicker 5 or open sites on the internet. Our assessment comprised of four aspects:

1. receptive (single word in carrier phrase)
2. expressive (single word)
3. phrase level
4. sentence level.

The paper-based pupil assessment grid was constructed with regard to these levels and aspects (figure 1).

For the receptive subtest, children were shown three visual presentations of a concept on the computer screen (for example, a picture of an 'elephant', 'ant' and 'man' for the concept of 'big'). They were asked to select the correct picture from the three visual presentations whilst the standard carrier phrase "Find the..." was given verbally.

For assessing single word use, a sentence starter was given verbally with a picture prompt (such as, "The man is ..."). If the child was unable to generate the target adjective then a verbal prompt was given (for example, "I want you to use the word 'frightened'. The man is ..."). If the word was self-generated it was marked on the grid with a tick. However, if a prompt was used a small 'p' was also entered.

For phrase level testing, the child was shown a picture (such as a dirty shirt) and prompted verbally with

the sentence-starter, "It's a...". Visual support was also provided using a colour-coding system (a green card for adjectives and an orange card for the noun). The colour-coding system is based on an amalgamation of semantic / grammatical colour-coding approaches that are used widely in speech and language provisions.

At sentence level the child was shown a picture to describe. The Noun phrase-verb-adjective-noun structure was prompted by colour-coded cards to denote each syntactical part of the sentence [pink-yellow-green-orange]. The children were familiar with this colour-coding system as it has been used extensively throughout the provision classes and therapy.

To make the screening more robust, we tested each concept three times (for a total of 36 trials). In retrospect, however, this should have been six trials of each concept to reduce the chance factor. To ensure consistency and reliability, one tester presented the assessment to all the children in a quiet room.

The results of our pre-tests prior to the 'therapy / teaching' input are presented in figure 2. We discontinued testing when it was evident that the child would not achieve any correct responses at that level. For example, child B was able to use many of the adjectives at single word level, but not within phrases.

Figure 2 Results of pre-testing

Child	Receptive - No. ✓ over 36 trials	Expressive - single word - No. ✓ over 36 trials	Expressive - phrase - No. ✓ over 36 trials	Sentence - No. ✓ over 36 trials
A	28	0		
B	33	30	0	
C	16	0		
D	32	9	0	
E	36	33	27	0
F	31	27	0	
G	6	0		
H	18	0		
I	36	31	0	



◀ The fruits of our labour...

Over the term from April to July 2006, one of the main focuses for the class teacher and speech and language therapists was development of adjectives. This included the twelve adjectives selected for the assessment, but also expansion of general adjectival use. Where possible, this work was incorporated into curriculum planning, for example within literacy. As signing is used within the provision to support spoken language, adjectives were consistently signed throughout therapy and teaching.

The class teachers and speech and language therapists met together to design several activities that were then stored in the central school database. This allowed all teachers to access the resources.

We found the Clicker 5 programme extremely useful during our assessment phases for receptive and single word expressive subtests. Initially, the collation of pictures and design of activities was time intensive. Our choice of pictures was restricting at phrase and sentence levels where video clips would have perhaps been more fruitful. It was difficult locating the pictures for the level three concepts: tall, thin, frightened, and long. These pictures were also not as successful during testing where some clarification was needed (for example, reference was made to comparatives such as 'tallest'). On occasions children made literal responses within the receptive subtest as a result of picture size, such as pointing to 'baby' for 'big' as it was the biggest picture rather than having internalised the concept.

The ACTIVprimary software enabled us to design fun interactive activities such as:

- Sorting pictures of big / not big items by placing 'not big' items into a visual box - children could move pictures around the screen;
- Spotlight tool for revealing a picture slowly for the children to describe, for example 'happy boy';
- Attaching noisy / not noisy sounds to pictures of items such as a fire engine - children could click onto the picture, listen to the noise and then describe it;
- Selecting a story background scene and characters like the Three Little Pigs. Tasks included brainstorming adjectives and writing them over the scene in colour-coded green, then writing on phrases and sentences.

Teachers within the provision became proficient users of these programmes enabling them to use the interactive whiteboard regularly during lessons. Speech and language therapists were timetabled to work within the classroom, for example during literacy. This allowed joint teaching around the interactive whiteboard, with therapists using supporting techniques like signing and language simplification. During 'therapy' sessions, the therapists carried



A teacher using an interactive board

out more traditional activities that included tactile experience of concepts like 'heavy' and 'cold'.

Reaping the benefits...

The children were re-tested in July 2006 on our assessment of adjectives (figure 3).

Figure 3 Results of pre- and post-testing								
Child	Rec.		Expr single		Expr phrase		Expr sent.	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
A	28	35	0	7	0	0		
B	33	36	30	34	0	0		
C	16	28	0	0				
D	32	36	9	12	0	0		
E	36	36	33	36	27	34	0	8
F	31	36	27	33	0	7	0	0
G	6	14	0	0				
H	18	29	0	0				
I	36	36	31	36	0	7		

Two of the nine children were already confident in matching a spoken adjective to a picture, and the results show the other seven improved. Of the nine children, six improved in their use of adjectives at single word level. For the other three, the nature of their speech and language disorders meant that single word production was very difficult.

It was disappointing that, of the six children who potentially could have used adjectives within phrases after the teaching / therapy intervention, only three were. However, anecdotally, the older children within the provision were using the adjectives readily at phrase and sentence levels after the intervention. They also became more confident in their use of adjectives in their written work. This suggests that the issue for the younger children can be addressed through time and continued work.

Thorny issues?

This project was not carried out as a rigid scientific study with a control group and formal statistical analysis, and all staff acknowledged the need for traditional approaches to the teaching of adjectives as well, using other multi-sensory techniques. Nevertheless, this project has borne fruit and provided support for using interactive whiteboard technologies as an effective teaching tool for the development of specific aspects of language.

The provision and school have continued to move forwards through this and other collaborative projects, and it was with tremendous relief that we were taken out of special measures early in 2006.

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References

- Becta (2003) 'What the research says about interactive whiteboards', http://www.becta.org.uk/page_documents/research/wtrs_whiteboards.pdf (Accessed 13 October 2006)
- Woods, G. (2002) *Concept Consolidation*. Romford: Cheerful Publications.

Resources

- Clicker 5 – details at www.cricksoftware.com
- ACTIVboard and ACTIVprimary software – see www.prometheanworld.com/uk

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