Hear-Say: Learning and communicating at home and in school

Michael Jones describes two research projects that are exploring how software can be used constructively at home, to support and influence learning and communication in school.

"I'm stupid. I'm stupid. I'm stupid." Words uttered-and sometimes shouted – regularly by Natalie as she struggles with her homework. Natalie is 11 years old, and has been judged to have a reading age of 10 years. Eight-year -old Rhiannon speaks well at home, but has developed extreme anxiety about talking in unfamiliar situations, and is virtually silent at school. Both children have very different learning needs, but are involved in two different pieces of research that are tapping into similar problems: loss of confidence, lack of self-esteem, reduced motivation and an increase in anxiety and frustration.

Let's tell Natalie's story first. In 2006 I was asked to write an article for Special Children about Lexion, an innovative piece of interactive software from Sweden, that supports children's reading and spelling (Special Children 175). Professionals who I contacted during the course of writing the article were so impressed by Lexion, that I asked for a complimentary copy so I could try it out for myself. Parents of 11 children with reading and spelling difficulties responded to my advert in the local paper, and I set about assessing them all. As Lexion also provides a wide range of games and activities following the assessment, it was necessary for me to make at least two visits to each family, to install the software on their home PCs and monitor progress.

Four factors emerged from this exercise. There appeared to be a large number of parents who were concerned that their children's needs were not being met at school, as the children's reading and spelling difficulties were not judged to be severe enough to merit extra support. The children appeared to have no other difficulties apart from reading, and particularly poor spelling. The children were either rapidly losing confidence, or their self-esteem as learners was very low. Their parents expressed equal levels of frustration, loss of self-esteem and increases in anxiety.

Some parents reported that school staff finally started to take some action when the children were in Y6: in the run-up to SATs. The significance of this was not lost on the parents, who felt that the schools had suddenly realised that their child was underachieving and that this would be reflected in poor SATs results. Whether this was the case or not, the Year 6 children talked to me about feeling worried and stressed, mainly about SATs. The parents' anxiety came from concerns that their children were spending inordinate amounts of time doing homework, were becoming anxious about SATs (partly due to the amount of SATs preparation they were involved in at school) and had developed negative feelings about themselves as learners. As Natalie's father put it, "Year 6 is last chance saloon when it comes to reading and spelling."

A close inspection of the results from the Lexion assessment showed that most of the children had one feature in common: they had very poor

phonological awareness. Research shows that one of the key predictors of later significant reading and spelling problems is children's weakness in phonological awareness. This includes difficulty with discriminating between speech sounds, which can later lead to being unable to link a spoken sound to its corresponding letter in any given language. Many practitioners working with children with reading and spelling difficulties will not find this at all surprising, as it is generally recognised that linking speech sounds to letter sounds, or phonemes, is the vital foundation for understanding reading and spelling. What was surprising was that five of the 11 children, including Natalie, had a similar medical history, and this might have a bearing on why potentially high-achieving children were achieving so badly because of reading and spelling difficulties.

Natalie suffered from chronic otitis media, commonly known as 'Glue Ear' in her pre-school years. Glue Ear is caused by a build up of fluid behind the child's eardrum, with repeated upper respiratory tract and ear infections as a major contributory factor. In the UK, otitis media is the single most common early childhood complaint dealt with by General Practitioners. Chronic cases, typically with intermittent hearing loss, and associated speech and language delay, are often dealt with by surgery, with the insertion into the eardrum of minute tubes known as 'grommets'. Hearing and speech can often improve rapidly after surgery, and this was the case with Natalie.

Recent research appears to confirm that there is a direct relationship between early speech difficulties and later reading and spelling problems. The major contributory factor is poor phonological awareness: not being able to discriminate between speech sounds in early life, and not being able to make the link between speech sounds and letter sounds in school. This certainly seemed to be Natalie's problem.

 Natalie, in common with many children with weak phonological awareness, used a mix of visual strategies, creating hybrids of images and letter-sound correspondence and letter names. She used a lot of working memory, and became quite exhausted and de-motivated. But crucially she seemed to be a 'good reader'. This was because, at least in the early stages of learning to read, she was able to convince her teachers that she understood what reading was about. Her parents, however, knew from the beginning that there were difficulties. Natalie also showed that she had learned the letter sounds, or phonemes, mechanically, but still didn't understand the important concept that spoken words consist of speech sounds. However regular work with Lexion on the family PC helped to establish the foundations of phonological awareness and other key skills. Natalie and her parents were delighted that she attained Level 4, which is the national expectation, in all three tested subjects.

Discussions with the parents showed that computer-based learning at home played a major part in revitalising their children's interest in reading and spelling. Children tend to give computers high status as objects, and playing on a computer is often one of their most favoured activities within the home. A child is unlikely to protest when he is told that his homework involves working

on a computer program for 30 minutes. Girls in particular seem to relish the opportunity to be involved with computer-based learning. Parents explain that this is often because the boys often dominate the home PC!

This piece of informal investigation has created a great deal of interest among practitioners. Deaf@x, a major UK charity that seeks to improve, through the application of technology, the lives of people with hearing impairment, are seeking funding for a two year research project. The project will aim to establish the link between early incidence of otitis media and later reading and spelling problems, and assess the value of computer-based learning at home and school in identification and remediation. A major achievement will be a raised awareness that children who may have had a hearing loss, are at high risk of having reading and spelling difficulties.

Natalie is an outgoing, sociable child, and has become a confident speaker. Rhiannon seems to be almost the complete opposite. She has no reading and spelling difficulties, but her extreme shyness as a young child has become a form of social phobia that is generally referred to as Selective Mutism (SM). Rhiannon, like most children with SM, speaks well at home, and is lively and chatty in the company of her parents and little brother. However when unfamiliar adults or children come to her house, she becomes very anxious, and finds herself unable to speak. She is also gripped with anxiety if an unfamiliar child or adult approaches her outside her home. This creates particular problems in school, where for several years Rhiannon was unable to speak.

As a Speech and Language Therapist, and later as an advisory teacher for children with communication difficulties, I took a keen interest in children with SM. Maggie Johnson and Alison Wintgens, who have pioneered a very successful approach to helping children with SM, influenced much of my work with schools and families. Their work is based on the idea that all children develop along a continuum of confident speaking, given positive experiences of communication. They acknowledge that children with SM often need an approach that takes very small steps that will help them become more confident speakers. This includes the setting up of a close relationship between home and school. One of the milestones, often seen when children are making progress, is when they begin to talk quietly with other children, but only out of earshot of adults.

With this knowledge in mind, it occurred to me that there might be a place for computer-based activities in a programme to help Rhiannon, who is at the stage where she will talk quietly with a group of close friends in the playground. The idea would be to encourage her to use software at home, where she is a confident speaker, and when the time is right introduce the programmes into her class. As Rhiannon would have greater knowledge of the software she could be used as an 'expert' to help other children. They would learn about the software, as well as become involved in sharing the activities with other children, and possibly even talk with children in class.

But why use computers to help Rhiannon? Why not a board game or other group activity? Many teachers have noted that setting children the task of working together at a computer can improve their communication skills, as well as their ability to cooperate. Several processes seem to be at work here. The computer is an inanimate object that children can interact with. It is also a high status activity that with the right software can generate learning and excitement, and increase motivation. Children need to communicate with each other, including giving advice and instructions and taking turns.

One crucial factor is body language: the children need to sit side-by-side. It has been noted that adults who need to sort out a problem, perhaps with relationship issues, often communicate better when sitting or standing next to each other, rather than face to face; e.g. when driving, doing the washing up or going on a long walk. By cutting out eye contact and concentrating on a joint activity, the adults are better able to talk with each other. Could it be that by encouraging Rhiannon to sit next to another child at a computer, using appropriate software, she might feel more relaxed, and more likely to develop confidence in using her voice in class?

When deciding on what software to use, Lexion seemed like an ideal choice. With its proven track record as an educational tool that is fun and interactive, it also has the benefits of supporting literacy learning for all children who use it. I had also worked with 'Choose and Tell', which has wide appeal, and is designed to help children communicate by making choices about what will happen next in a story. I met with Rhiannon's parents and visited her school. A strong home –school link already exists, and Rhiannon was thrilled with both software packages. The next stage was to introduce them in class.

What happened next? This can't be revealed yet, as Rhiannon is one of the children taking part in ongoing research supported by AACT for Children, a charity supporting projects using ICT to improve the lives of children with communication challenges. What can be confirmed is that computer-based learning has a strong role to play in supporting children with learning and communication needs. Schools have traditionally advised parents on how to teach children at home, but it seems that schools would be well advised to listen more to parents of children with learning and communication needs, and respond to the methods that work at home

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The Selective Mutism Resource Manual by Maggie Johnson and Alison Wintgens, is published by Speechmark www.speechmark.net