



Linking reading and spelling

After two years of trials to ensure its suitability for use in UK schools, Lexion is now seeking the success here that it already enjoys in Sweden. **Michael Jones** spoke to both developers and users

The English and Swedish languages share a common problem: they both have highly complex spelling systems that are difficult to learn. According to the British Dyslexia Association they are “two of the most dyslexia-unfriendly languages in the world”. With as many as 50 per cent of UK school children at risk of experiencing reading difficulties, and up to 10 per cent with some form of dyslexia, teachers need to identify children at risk as early as possible. But once children have been assessed and their needs identified there can often be a frustrating wait before decisions are made about what approach should be used.

Children and teachers also need access to user-friendly and interesting programmes that will encourage practice, and help children understand how to unravel the reading and spelling process.

Standardisation

A new Swedish computer program, Lexion, is helping English children put together the complex pieces of the reading and spelling jigsaw. Two Swedish Speech and Language Therapists, Martti Martens and Olof Gunnilstam, developed the program 15 years ago. Olof originally designed the program for adults with aphasia. Martti, who at the time was working with

children with language-related learning difficulties and dyslexia, saw its potential for helping children and young people with dyslexia. Lexion was adapted accordingly, and is now used in 80 per cent of Swedish mainstream schools, with the percentages for schools in Norway, Finland and Denmark increasing.

Annika Hallsvik has been steering Lexion through an extensive standardisation process in the UK. She has met many practitioners, children and parents, and has had an overwhelmingly positive response. "Lexion has a number of features that make it unique in the field of computer-based learning," she explains. "One key area is that children can use the program at home. Teachers can choose exercises that they want the children to focus on, and download them onto a USB memory stick, or email them directly to the children for use on their PC at home."

As well as having a vast number of games and exercises, Lexion has other unique ingredients: you can make up your own exercises, and even download images from the Internet. This increases motivation and understanding, as you can tailor-make the program to suit a child's particular interests or needs. If a child has an interest in fishing, for example, the teacher can download images of fish and angling from Google, and incorporate these into specific exercises.

Annika is very clear about why UK children experience literacy difficulties. "English children need a longer period of education in phonological reasoning before letters and their sounds are introduced. There is a high risk of confusing letter sounds and letter names, which affects the acquisition of breaking words down and spelling, resulting in fragmented reading habits.

"Lexion helps the teacher decide what approach is needed. Lexion assesses the child and generates exercises that help to build the foundation for efficient readers. After a 15- to 25-minute assessment, the teacher is immediately given a profile of the student's strengths and weaknesses. You will find exactly where the problem is: comprehension, reading, spelling or phonological awareness. The child is then given a series of exercises that go right to the heart of their reading and spelling problems. The child can start instantly on a process of developing the key skills they need for reading and spelling."

Phonological awareness

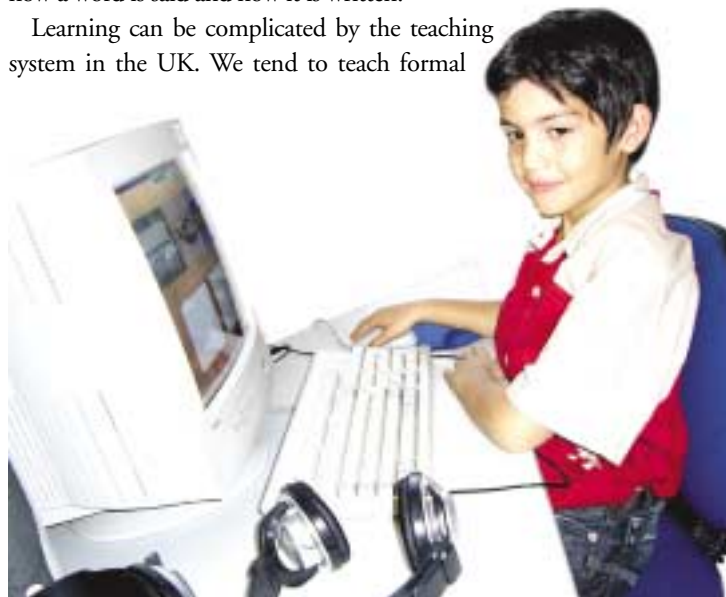
Lexion is based on the theoretical work of two Scandinavian psychologists, Torleiv Høien and Ingvar Lundberg. They found that when they tested young children's knowledge of reading, the key predictor of later significant reading and spelling problems was weakness in *phonological awareness*. This is the ability to discriminate between sounds, which will later lead



to being able to link a spoken sound to its corresponding letter in any given language. (Høien & Lundberg 2001)

The problem is compounded for UK children because the links between the spoken and written word, the *orthography* in English, is highly complex. The more demanding the orthography, the more we need to develop children's ability to hear sounds and words, and know about them: whether a word is long or short, how many syllables it has, and how many sounds it is made up of. This is less of an issue in Italian or Spanish, where there is a more direct correspondence between how a word is said and how it is written.

Learning can be complicated by the teaching system in the UK. We tend to teach formal



reading earlier than in other countries, so children are not ready to absorb what is being taught. Children can become confused when they learn letter names and sounds at the same time. Children will naturally develop visual forms of reading, and can recognise words as whole shapes: the *logographic* method. This is an important skill, but does not help when you meet an unfamiliar word and need to break it down, or *decode* it. If a child only relies on visual recognition or logographic methods, then they will have difficulties with spelling, as they have not developed the necessary sound/letter knowledge. As Annika Hallsvik puts it, "That's fine if you learn to recognise 'McDonald's', but how are you going to read 'Starbucks' if you've never seen it before?"

Many children in the UK rely on this logographic method of learning to read, and fail to fully develop an appreciation of how sounds make up words in English; i.e. they have poor *phonological awareness*. There is general agreement that difficulties with phonological awareness are at the heart of the problem, and are the heart of the solution.

Changes

Practitioners speak highly of Lexion, as a very useful tool for supporting children through all the difficulties described above, and particularly focussing on phonological processing. Like other computer-based learning programs, it is highly motivating for students, which is essential if children are to put in the necessary hours of practice. They are given regular feedback by the program, in terms of percentage achievement. There are large elements of repetition within the exercises, but the program cunningly adds subtle changes as the child progresses, introducing the important element of challenge.

After two years of rigorous testing of the product in schools across the country, the UK standardisation process for the primary phase of Lexion is now complete. Practitioners and students throughout the country have had a chance to give it a thorough assessment, and this has led to many changes to the original Swedish version.

Annika needed to consider dialect and its effect on phonological processing. Some words have been

replaced; e.g. 'plums' as this was pronounced very differently in Birmingham and children didn't respond correctly. The word 'napkin' has been removed from the section on phonological awareness, as children no longer recognise this word, as they tend to use paper towels. Lexion now contains profiles of work for every term from Reception to Year 9, resulting in exercises that follow the Primary National Strategy. Teachers can create

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exercises for individuals or groups by using a 'predefined profile', so the program can now be used to teach the whole class at an appropriate level, as well as aiming exercises towards children with specific learning needs.

Penny MacInnes, a secondary school teacher from North London, has used Lexion extensively, and is very enthusiastic. "It is an excellent system. Lexion offers children an opportunity to practise skills in an engaging way. Students of all ages in my secondary school enjoy using it. Lexion exercises help them to understand the make-up of the words we use; e.g. they can break down the words into phonemes and rebuild them.

"They can also hear the sounds that phonemes make. Lexion allows you to make your own exercises up and this is a great tool, as I can put spelling words into the program or difficult reading words that can then be practised. Siobhan, aged 11 years, was equally positive: "The games make me think, and make my writing more descriptive. It's really fun. I can't wait to for Penny to help me install Lexion at home"

Developments

There have been some interesting and un-



expected developments from the standardisation process. Mary Donald and Susan McAuley, ICT Support Teachers in North Lanarkshire, were involved in assessing a number of children chosen at random in a local school. "We found the user manual and the tutorial process to be very helpful, and the whole program is definitely user friendly. The children thoroughly enjoyed being assessed, and they seemed to enjoy the repetitive instructions and the way the computer speaks to the children directly, with good tone and speed. What was particularly interesting was that the Head Teacher found the results fascinating; giving her insight into the children's reading processes, and potential difficulties. The school is likely to use Lexion as a tool for 'benchmarking' reading throughout the school, and monitoring progress."

Frances Girling, a Speech and Language Therapist working for Cornwall's Children, Young People and Families department, took Lexion in a different direction.

"We used Lexion for 18 months in local schools, and found it to be an ideal tool for working with children with speech problems, many of whom are at risk of going on to have difficulties with literacy." Frances' colleague Karen Stephens used Lexion with a group of children in a Reception class, who had been identified as needing support with language development. "We used the interactive whiteboard to listen to environmental sounds, play memory games, and an activity called 'sounds similar'. The children loved the interactive nature of the games. Every week they would be queuing up outside the door, waiting to play."

Frances is currently exploring the possibilities of using the program with children with Selective Mutism, who can talk at home, but are unable to talk in school.

Practitioners are also finding that the program is having an impact on children's expressive language skills. This may be because many children with specific learning needs do not read widely and as a result do not have access to the rich language of literature. A language-based program such as Lexion, with its repetition of highly visual and auditory elements, is therefore likely to improve vocabulary. In Sweden Lexion is being used with children learning Swedish as an additional language, and the program has the potential to make an impact on the teaching of English as an additional language in the UK.

Lexion is used as part of a range of programs at Learning Leap, an after-school centre specialising in computer-based learning in Harrow. Paleeka, a girl aged 9 with a near photographic memory, is described by Director Siraj Shamsuddin as "A perfect example of a logographic reader. She was learning words, but her spelling suffered as she had limited phonological awareness. Lexion helped enormously. Paleeka could



work at her own pace, and was getting rewards for achieving, as she wanted to be independent.

"We use Lexion as one of a number of computer-based learning programs. These are inherently motivating for children, but one needs to find a balance between programs to ensure that children are using a range of learning methods."

Eight-year-old Arsalan is another student at Learning Leap who has made spectacular improvement in his reading. His mother puts his progress down to computer-based learning, including Lexion: "Children are not competing against each other, they are competing against themselves. This increases their motivation."

The final word on Lexion should go to Victoria Crivelli of Worcestershire Support Services and a member of the British Dyslexia Association's Computer Committee. She trialled the early, English version of the program in schools in Worcestershire, with great success. "Lexion is one of the most comprehensive and innovative pieces of software I have seen for many years. Being able to email home or to other computers the interactive activities, at no extra cost, is a brilliant use of ICT.

"While it may not have the flashy graphics of some current programs, I think it will prove to be as popular as *Wordsbark*. This took a while to establish, but has grown to be a bestseller. Lexion is being developed in the same way: by the design team listening to pupils and teacher needs, based on sound practice and designed with attention to details."

Michael Jones is an educational consultant

References

Lundberg, I & Høien, T (2001) In A.J. Fawcett (ed.) *Dyslexia: Theory and Good Practice*, London: Whurr.

For more information about Lexion visit www.lexion.co.uk A single teacher's licence is £195.00, with additional teacher licences at £50.00. Lexion is currently available in the UK through: Inclusive Technology www.inclusive.co.uk iANSYSTSLtd www.dyslexic.com Propeller Multimedia Ltd www.propeller.net Learning Leap Education www.learningleap.co.uk