Can we teach Daniel to spell?

Jennifer Baker examines the importance of mental graphemic representations (MGR) and rapid automatic naming (RAN) through a case study of a typical bright young boy who really struggles with spelling.

How does Daniel process sounds and letters?

Daniel is somewhat typical of the children we work with in our clinic. He has a profile of strong phonological awareness but very low rapid automatic naming (RAN). Maybe this recurring profile is suggestive of the rigorous phonological awareness (PA) training that children in Western Australia receive in the junior primary years. Maybe the children who are now most at risk for reading failure are the ones who have attained low PA skills through classroom programs, but whose RAN remains weak (as there are no reliable evidence-based methodologies to improve RAN exclusively).

On the Comprehensive Test of Phonological Processing (CTOPP-2) (Wagner, Torgesen, Rashotte and Pearson, 2013), Daniel’s profile is asymmetrical, unbalanced enough to force him into an over-reliance on the phonological route to reading and spelling acquisition, thus not allowing him access to the orthographic route. His results show that:

- Phonological awareness is at the 97th percentile
- Phonological memory is at the 50th percentile
- Rapid automatic naming (Symbolic: letters and numbers) is at the 9th percentile
- Rapid automatic naming (Non-symbolic: colours and objects) is at the 12th percentile

What does this look like?

- Over reliance on phonemic analysis: Daniel will “sound out” complex words that can no longer be satisfied with a purely phonic approach: speshel /spes/ /spes/ /fures/ /furus/
- Inconsistency: Daniel will spell the same word with two or three different versions within the one text: dangers /dangers/ d anger s
- Violations: Daniel will encode words using violations of English spelling orthography: jummped / b ars c ekt
- Lack of automaticity: Daniel relies on mnemonics for words such as “because” that he should have automatic access to by his age.

In a spelling test of words taught in a previous week, his self-talk reveals the struggle he experiences with accessing new learning:

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come
  “Is that ‘came’ or ‘come’? I can never remember.”
came
because
  “Big elephants can always be```
Professor Nation’s work is of direct relevance and critical importance to everyone working with children with language and literacy difficulties. Registrations have been strong for these workshops and we are expecting that they will generate a lot of interest and discussion.

Spelling: Beyond the Alphabetic Principle

**Perth:** Saturday 20 October 2018 Edith Cowan University Lecture Theatre building 10, room 131

Sarah Asome will present a systematic explicit evidence-based approach to teaching spelling, focusing on teaching spelling as a ‘process’, based on the structure of the English Language including phonology, syllabication (structural analysis) and morphology. Explanatory session notes and hands-on practice will be provided. Participant will learn:

- basic procedures for spelling regular 1-syllable words based on sound-symbol relationships, (phonology)
- basic procedures for spelling irregular words,
- spelling rules for 1-syllable words,
- basic procedures for spelling multisyllabic words on syllables, (structural analysis),
- spelling rules for adding suffixes, (morphological principles).

Sarah Asome is a dyslexia specialist and the Learning Support Leader at Bentleigh West Primary School in Victoria. She has been instrumental in leading change at BWPS, which has led to a significant increase in their students’ literacy levels, with the 2018 NAPLAN results now placing BWPS as a high performing school. Sarah also continues to support many colleagues state and nationwide in implementing evidence-based literacy instruction in their schools. In 2015, Sarah Asome was awarded ‘Outstanding Primary Teacher in the VEEA awards. Sarah is featured in “Outside the Square”, a DVD resource for teachers, and in 2017 appeared on Insight – ‘A teacher Who Changed My Life’. Sarah regularly presents at state and national conferences in relation to literacy and dyslexia. She is an inspirational ball of energy and passion.

News from the Website

The LDA website provides members and those interested in supporting students with learning difficulties with a treasure trove of information. Some new functionality has been added to the website recently.

**LDA Bookshop**

The new, revitalised, LDA Bookshop was launched in late May and has got off to a great start. The online bookshop features a carefully curated selection of books for LDA members and visitors, founded on evidence-based research, which bridge the gap between research and practical teaching resources.

The LDA Bookshop is regularly updated with new resources and recommendations from LDA members are welcomed. If you come across a book which you believe will be helpful to other LDA members, then please let us know via the Contact page on the LDA Bookshop website. All suggestions will be reviewed and if aligned with the bookshop’s guidelines, they will be added where we can offer them to LDA members at a reasonable price.

To see for yourself and to make suggestions, click on the LDA Bookshop link on the home page of the LDA website.
understand small elephants."
because
breakfast
"break the fast."
breakfast
elephant
"el – e ..........just figuring out if it's "ph" i think i got it wrong."
elephant
dangerous
"if i got that right, i'd be surprised."
dangers

What were his goals for intervention?
The overall goals for intervention were to develop accuracy, fluency and automaticity at word level for reading and spelling in order to improve his functional literacy ability. It was vital to develop robust mental graphemic representations (MGR) from Daniel's existing "fuzzy" MGRs.

What do we mean by robust mental graphemic representations?
We want every single word that a child has to read or spell to end up becoming what is commonly known as a "sight" word (Kippatrick 2015 and Apel 2011). This is a word that is deeply embedded in a reader's orthographic word bank so that individuals can access that representation rapidly and efficiently. Once a word has been stored accurately, it is considered to be a robust mental graphemic representation (or MGR).

There is some contention surrounding the use of the word "sight" to refer to words stored as MGRs. This is because the semantic connotations of the concept "sight" suggests to some that the words must be taught by highly visual mechanisms, as if by "sight" when nothing is further from the truth!

Apel (2011) explains that the way to build up "sight" words is through the development of robust MGRs. He clarifies, "MGRs contain specific sequences of graphemes representing written words. MGR knowledge is one aspect of orthographic knowledge; when one has a clear mental image of a word, then correct writing and reading of that word should occur." (p.593)

How do we measure mental graphemic representations?
Norton and Wolf (2012) explain that rapid automatic naming (RAN) accounts for much of the fluency we strive for with reading and spelling acquisition; it is considered to be a microcosm of the reading system, providing an index of one's abilities to integrate multiple neural processes. Administration of RAN tasks provides insight into whether a student is equipped with the ability to form strong, robust MGRs. The nature of the relationship between RAN and MGRs is not definitive, however it can be hypothesised that RAN "taps into" a student's naming speed for orthographically-presented stimuli. Children with average to high RAN cope much better with the establishment of robust MGRs than children with poor RAN.

How do we form robust mental graphemic representations?
Ehri (2014), Moats (2000), Kippatrick (2015) and Apel (2011) provide us with some of the best advice for facilitating the development of robust MGRs. They propose the following principles to employ within any literacy program at Tier 1, 2 and 3 levels:

- Use a "speech to print" approach; capitalise on our innate understanding of sounds in words
- Show children the placements for different phonemes; use puppets, models or videos
- Don't spend too much time on unnecessary tasks of phonological awareness; focus on synthesis and analysis (but build in more complex manipulation at a later phase)

- Introduce words for reading at VC (vowel + consonant) and CVC (consonant + vowel + consonant) as soon as there are enough phoneme-grapheme correspondences to do so
- Continually engage in phoneme-grapheme mapping
- Integrate spelling with reading; they help each other!

Use decodable readers. Allow students to 'access' words with confidence; help them to learn how words work

- Repeat the reading and spelling processes at word and text level; this will help to build up robust MGRs
- Build in phonemic and graphemic manipulation as advanced phonological awareness activities

What did Daniel's therapy "look like"?
I elected to present Daniel as a case study for the purpose of exploring orthographic processing to develop spelling competency. The primary reason for doing so was to reflect on what did not work and to speculate on what would have been a more effective treatment regime for him.

When I was treating Daniel in the clinic several years ago, the universal focus for intervention was on a much more analytical and cognitive approach that involved teaching the student words at a "meta" level and providing them with semantic as well as morphological explanations for the structure of certain words. Armed with this theoretical rationale, I embarked on a model of intervention that was heavily weighted towards morphology, semantics and etymology and less geared towards all those techniques that we now know are vital for the establishment of robust MGRs.

When he was 11, I worked with Daniel for 4 weeks on the 'ous' ending in approximately 12 words. He received 4 one-hour sessions and approximately 20 minutes of each session was devoted to this goal. Home practice was set at 3 twenty-minute sessions per week.

The issue in therapy was that no matter what rule or concept was taught to Daniel, he always demonstrated thorough understanding of it within the lesson, but generalisation was slow and inconsistent.

The first strategy was to divide the "'ous" words into those with positive and negative connotations. Positive words included: fabulous, tremendous, marvellous, joyous, famous and generous. Negative words included: dangerous, jealous, nervous, ridiculous and serious. It was assumed that attaching contrasting meaning to the words would facilitate his memory of the system.

In addition, the syntactic role of the morphological ending 'ous' was examined and reinforced. Daniel was told that the 'ous' turned a word such as 'danger' which was a noun into an adjective 'dangerous'. The same could be said for 'fame' to 'famous' and 'joy' to 'joyous' etc.

Another phonological strategy was to divide words into syllables and recognise how the 'ous' ending was embedded in the final syllable (and contained the schwa sound). Daniel was required to read these words, break them into syllables, sound them out, write them
Where to next?
The issue for Daniel is that he can understand how words work; he has strong linguistic and morphological awareness. He can process the phonemic, morphological and semantic aspects of the word selections, but he cannot “lip” over into orthographic processing where he develops robust MGRs of these words because his RAN is too weak to allow him to do so. And so, it is necessary to “trim” the word list and reduce the number of items he must learn. It is also important to do more mental processing of the words, where he is required to hold the word at a mental level and identify and manipulate the phonemes and graphemes contained within it. More repeated reading and more encoding of the selection of words will also assist to develop stronger MGRs. Daniel is very aware of his difficulties and gives me encouragement, saying, “I think this new method is working for me Jen”, but until I can test his spelling of “dangerous” and he writes, “dangerously” I will not be happy with my methodology!

Jenny Baker has worked in the language and literacy arena for over thirty years and now runs a busy private practice in W.A. with 21 Speech Pathologists working with students of all ages with literacy issues. Jenny has presented workshops on spelling and written expression at many events conducted by Speech Pathology Australia as well as The WA Dyslexia SPEDF Foundation (DSF); she teaches Fourth Year Speech Pathology students about theoretically sound and empirically researched practices underpinning the assessment and intervention of literacy skills. She is an advocate for the vital role Speech Pathologists play in the research based diagnosis and remediation of learning difficulties.

References: