Once again we would like to thank you for supporting our research in the past or at present. 2012 has been a big year for our entire researcher team. Our Christmas newsletter includes an update on some of the ongoing and new projects. Enjoy!

Improving Reading Fluency

A good reader is very accurate and reads with very little effort. When very little effort is needed for reading it is said to be automatic. For reading to be automatic, children need to learn to recognize words as soon as they see them. Up until now, most reading interventions have been focussing on improving reading accuracy. However, it is also known that it is actually much harder to improve reading speed and fluency in struggling readers. Research in languages other than English, such as Dutch and Italian, have shown that reading fluency can be improved with the aid of computerised reading tasks that help children to focus on syllables in words. In this research Eva Marinus, Hua-Chen Wang, Saskia Kohnen and Genevieve McArthur have been trying to find out if this also helps children to learn to read more fluently in English. And if so, whether improved reading fluency stems from training syllables or from just training reading speed. We would like to thank all the children and parents that have been participating in this study!

Helping children learn to read Sight words

This year, Anne Castles, Lyndsey Nickels, and Hua-Chen Wang continued their research project exploring how children learn to read tricky sight words like yacht. Children in Grade 2 learned new written words in the form of inventions by the mad scientist, Professor Parsnip (e.g., a “jait” is a machine for polishing flowers!). Here’s a picture of a ‘jait’

Sometimes the pronunciations of the words that the children learned directly matched their spellings (e.g., ferb pronounced “ferb”) but sometimes they did not, and so were particularly tricky (e.g., cleap pronounced “claip”). We then assessed how well the children had learned to read and spell the new words. We found that the tricky words were indeed much harder for the children to learn. We also showed that learning for the two types of items was predicted by different factors, with knowledge about the meaning of the words (vocabulary knowledge) being particularly important for learning the difficult sight words.
In Phase 1 of the Reading Training Study (RTS), Gen McArthur and colleagues tested the effect of three types of reading training in children with dyslexia: (1) phonics training (8 weeks) followed by sight word training (8 weeks); (2) sight word training (8 weeks) followed by phonics training (8 weeks); and (3) both types of training mixed together (16 weeks). The phonics training used phonics exercises from Lexia’s Strategies for Older Students. The sight word training used Macrowork’s DingoBingo and flashcards to teach children irregular words (like yacht). Before and after treatment, the children did a large number of reading tests. The results revealed that phonics plus sight-word training has moderate to large effects on reading skills regardless of the order of training. Further, phonics has its largest effect on reading tasks that require letter-sound reading and sight-word training has its largest effect on reading tasks that require reading words by sight.

In Phase 2 of the RTS, we are focusing on the effects of phonics training versus sight word training. We are conducting both types of training using the same online platform called LiteracyPlanet (www.literacyplanet.com). So far, 80 children with dyslexia have been recruited for the study, which will be completed in 2013.

You may have come across a form of social-media called Twitter. Twitter is a website that people use to report brief snippets of information. It’s everywhere! If you’ve been watching X-factor, you will have noticed viewers ‘tweeting’ their opinions and you may have heard what some celebrities are having for lunch! Interestingly, Twitter is a useful place for researchers to share information too. Our very own Anne Castles is a good example.

Anne tweets regularly about reading-related matters. Recently she has shared information on evaluating ‘Brain Training Programs’ which has included a piece that Gen McArthur and herself wrote for ‘The Conversation’ (www.theconversation.edu.au) entitled: ‘Brain Training’ ... or learning as we like to call it. This article highlights the need to consider the scientific evidence for the success of a treatment programs and not be distracted by the bold claims and scientific jargon. Anne also links to articles and discussions about reading and reading difficulties by other researchers, clinicians and teachers.

You can follow the following reading researchers at Macquarie on Twitter:

- Anne Castles @annecastles
- Genevieve McArthur @genxmac
- Nic Badcock @nicalbee

**Free reading training!**
If you have a 7- to 12-year-old child who is struggling to learn to read, please contact: kirsty.jones@mq.edu.au / pip.eve@mq.edu.au 02 9850 6736
In the September school holidays, Nic Badcock and a team of researchers ran The Holiday Research Program. In one week, 57 six- to twelve-year-olds visited Macquarie Campus for half a day. Affectionately titled “The Search for the Triarkian Voyager”, the kids completed a series of experiments and challenges to unlock clues to discover the secret to a space-exploration story. The underlying science of this program examined cognitive preparation and learning in children with and without dyslexia.

We examined cognitive preparation by measuring how fast children responded to a dot presented on a computer screen. Sometimes the time interval before the cue was long and sometimes it was short. We know that performance in this task indicates the involvement of the frontal areas of the brain and we predict that these areas are less active in children with dyslexia. We’re looking forward to analysing the data soon.

On top of that, testing nearly 60 children in one-week is a massive achievement. It relies on lots of people working together especially the children who attended and their parents. A big thanks to all of you!

You in the Holiday Program?
If your child is aged between 7 and 11 years and they’d like to be involved in our next Holiday Research Program, please e-mail Kathryn Preece to register your interest. kathryn.preece@mq.edu.au

Spelling Training Study
Spelling is tricky! In English, there are lot of words that cannot be spelled using the letter-sound rules, such as said (not sed). These are called “unpredictable” or “irregular” words.

If children cannot use the letter-sound rules to spell unpredictable words, do we have to teach them the spelling for every single unpredictable word in English? That would be an impossible task! And it may not be necessary. Previous studies have found that training unpredictable words leads to gains in untrained unpredictable words. Similarly, some of the children that have already completed the Spelling Training Study have also shown these gains.

This is called ‘generalization’. Saskia Kohnen and her team are trying to work out which words generalize and how to promote generalization. The team are still looking for poor spellers in grades 3 to 6 who are “phonetic spellers”; that is, children who spell words the way that they sound (e.g., enough as enuf). The study takes about 3 months to complete and rewards are provided to children who complete the study. Thank you to all the families who have already participated and contributed to our study!

Free spelling training!
If your child is in grade 3 to 6 and spells words as they sound please contact: kristina.barisic@mq.edu.au (02) 9850 6858
Introducing: 

Linda’s Letter Sounds out of Australia!

Last year Linda Larsen developed a test – the letter-sound test – that can be used to assess children’s knowledge of letter-sounds. Learning letter-sounds is important for young children as it allows them to read many new words by sounding them out. This means reading for example the word CAT, by saying the sound associated with each letter in the word, so saying ‘k’ ‘a’ ‘t’ and then putting (or blending) the sounds together to from the word.

The LeST (Letter Sound Test) measures this skill. It is easy to administer and involves showing the child some cards with letters (e.g., ‘t’ ‘o’) or letter-combinations (e.g., ‘th’ ‘ea’) on them and asking the child what sound the letter or letter-combination makes. The LeST is available for teachers and other researchers to use free of charge from the Macquarie Online Test Interface website www.motif.org.au.

In the past year Linda finished her data collection (Thanks to the boys at Redfield College in Dural!) and travelled to Europe and North America to present her research. Linda presented on (1) how children sound-out words and when this may go wrong, and (2) the order in which children learn letter-sounds at two conferences and visits to other universities. In the picture you can see Linda presenting one of her studies at a large international conference in Montreal, Canada.

Linda’s currently in the last phase of her PhD and aims to be finished in mid-2013.

This year has seen the creation of the Neuronauts Brain Science Club. This is a register of young people (0 to 17 years) who are interested in taking part in research on the brain. By signing up to the register, they can take part in studies that help us learn about how people change with age. Many of the reading research projects will be advertised through Neuronauts.

How does Neuronauts work?
If your child wishes to become a Neuronauts member, you need to sign up via the website (www.ccd.edu.au/Neuronauts).
Once registered, you will receive a newsletter six times per year that list all oingoing Neuronauts studies. You can register your child’s interest in a study using the Neuronauts website or using a volunteer form that you send via post (no stamp needed). The Neuronauts’ administrator will then give your contact details to the research who is running the study. They will contact you with more information about the research. If the study still sounds interesting to you and your child, then you and the researcher can arrange a Neuronauts session!

What will my child do?
Different studies involve different acitivities. In most studies, volunteers are asked to do computer tasks, pen and paper tasks, or take part in observed play sessions. In a few studies, participants might be asked to lie in a brain scanner or wear a cap fitted with special brain sensors!

For Neuronauts information
visit: www.ccd.edu.au/Neuronauts
or e-mail: neuronauts_admin@mq.edu.au