Sensory Phonological Tools

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Executive summary

Over recent years, our school has focused on supporting students to gain the basic phonological skills in order to meet the New Zealand Curriculum benchmarks at 40, 80 and 120 weeks at school. Over the last three years, our staff have analysed longitudinal data, consulted families and sought external support in meeting the needs of junior students. This has resulted in trialling resources and interventions with a sensory phonics focus.

This sabbatical project focuses on further researching this area and in developing a programme to meet the best needs of students at RidgeView School. We hope to make accelerated progress in reading and writing through the careful alignment of a multisensory approach alongside the learning of letter sounds. This includes the skills of blending and segmenting phonemes.

Since my return and one month's implementation, the programme is showing high levels of engagement and the students are already recalling learnt sounds and recording these accurately within words.

Purpose

The purpose of my sabbatical was to research and plan for the integration of sensory tools to improve the literacy levels of Maori and Pasifika students and those with additional needs or learning delays.

I aimed to find tools and approaches that would support these students in gaining fundamental phonological understanding (sound and letter knowledge) that they need to read and write text. This should equip them to meet the literacy expectations of the New Zealand Curriculum.

Rationale and Background Information

My desire to improve the achievement of priority target students at RidgeView School provided the drive for this initiative. It motivated an initial inquiry that included discussions with our School Community and the trial of some sensory tools.

Historically, students at our school gained success more easily in numeracy than literacy. We knew that they were stimulated by the material resources that are woven through the NZ Mathematics teaching model. It provides them with a strong basis for retaining concepts and applying their learning across different mathematical contexts. We used this knowledge as the basis for our initial trials into the use of sensory tools in literacy over the past three years. There was sufficient success in our early trials to warrant a plan to develop and apply our understanding further.

The needs of our School mirror those of current National concern in Literacy. The Ministry of Education's 2nd Priority Area is that '*every child achieves literacy levels that enable their success, without the need for future interventions*'.

Our school is diverse in make-up and students represent a variety of demographics and cultures. The entry level of our 5-year-old students is varied and several students benefit from planned and

staged transitions to school. We have a disproportionate number of students that require support to access the curriculum. These students do not make the expected gains in their first two years of school in comparison to their peers.

This initiative supports our long-term commitment to increasing the pace of target students' learning, improving overall literacy levels and building school-wide capacity.

ACTIVITIES UNDERTAKEN
Research
Literacy
Known reading difficulties
Literacy underachievement in NZ (meeting the needs of Maori, Pasifika and Special Needs' students)
Phonological knowledge and acquisition
Approaches to responding to the differences in the phonological entry level of 5 year olds
Established and recognised phonological programmes in NZ and UK

Numeracy model
Numeracy Strategy - Behaviourist objectives and radical constructivism
How materials are used to scaffold learning in different ways

Sensory Literacy Learning
Programmes and models
Schools using 'multisensory' approaches
Individual tools
Use of computer technologies

Resources
Web-based
Published

Communicating with colleagues
NZ
United Kingdom
Australia

Resource database of sensory tools

Designing sensory tools for use

Planning Programme - Sensory Awareness Programme

Implementation – Ongoing and not the subject of this report

FINDINGS
Underachievement in Literacy
Children who find reading acquisition difficult often have poor decoding skills which stem from gaps in phonological knowledge and their ability to apply learnt strategies when reading unknown words. These children are usually identified in schools by:

- a lack of letter sound knowledge
- difficulty in blending sounds (when reading)
- difficulty in segmenting sounds (when writing)
- confusion with graphemes (letters)
- confusion with related phonemes (sounds)
- uncertainty between different vowel phonemes within the English language

The other main contributor to poor reading and writing achievement is a low level of language comprehension. Although many of the students that fall into this category are identified on entry to school, these language delays impact on literacy acquisition and tend to compound children's inability to be successful in literacy and often restricts the breadth of their access to the curriculum.

There continues to be an ongoing global focus into how we can support students in developing phonological awareness. Rather than involving students in one-off intervention programmes, some countries, including the UK and Australia are adopting ongoing school-wide programmes that develop phonological awareness throughout students' junior (and in some cases) senior primary school years.

Following a 2006 Reading Review, the United Kingdom adopted a 'Synthetic Phonics' approach based on a highly paced programme that explicitly teaches sounds, letters, blending and segmenting. Today, over a quarter of UK primary schools use the 'Read Write Inc.' (developed by Ruth Miskin). Some areas of Australia and New Zealand are taking on these same programmes or designing and adapting programmes that incorporate a combination of these elements and approaches in teaching phonemic awareness as a basis for literacy acquisition.

Multisensory Approach
A multisensory approach to learning can be more effective in meeting the diverse needs of a class or school, than a unisensory approach. It allows students to use a range of senses when processing new ideas and concepts. By incorporating the visual, auditory, tactile and kinaesthetic senses into a teaching programme, students are more strongly supported in making connections in what they are learning. This can enhance the ability to transfer this information to their long-term memory (Moats and Farrell, 1999).

Stanovich and Beck (2000) and Scarborough's (2005) research both independently discuss the benefits to reading development through using a *'multifaceted, multidimensional, cognitive process that involves dynamic interaction of a range of related variables'*.

Our experience at RidgeView has confirmed that there are improved student outcomes for Maori, Pasifika and Special Needs students when components of teaching and independent activities incorporate kinaesthetic and sensory approaches. This has been confirmed during a Hui with our Maori families, where many parents related the belief that their children had better learning experiences when these approaches were applied.

The New Zealand Numeracy Project
The New Zealand Numeracy Project uses a teaching model based on the research of Pirie and Kieren (1989). It uses equipment and materials to teach new concepts, followed by imaging tools to scaffold children's understanding from the abstract to concrete. It is centrally based on a constructivist approach, where new knowledge is built on previous learning (Kanuka and

Anderson, 1999).   The Project is also focused on acquiring knowledge within a highly communicative and social environment where *'rich interactions with others substantially contribute to children's opportunities for learning'* (Wood, 2002).

Use of materials in Numeracy
The New Zealand Numeracy Project successfully uses a variety of tools to introduce students to new mathematical concepts.   Students are involved in sensory learning in addition to a visual or auditory-only approach.   These include:

- Large body movements
  e.g. lily pads, bowling and skittles, large number mats and bridges
- Manipulating objects
  e.g. pipe cleaners, threading, number fans, washing lines and deci-rods
- Small movements where students 'handle' or manipulate materials
  e.g. dice, cards, Slavonic abacus, Loopy game
- Visual tools
  e.g. hundreds boards, flash cards, Boggle

Transition of tools into a Literacy Context
The success of our students though this approach to numeracy has driven us to consider how we can include kinesthetic and sensory tools into our literacy programme to improve achievement.

It appears that most modern phonics based programmes (UK, Australia and NZ), include a small number of multisensory components to support their approach. These are used to supplement learning rather than the basis of knowledge transference.

My research and discussions through this project leads me to believe that many teachers, parents and educators have considered the need for incorporating tools into their teaching and have designed materials or strategies to support their own children's learning (either in the home or within the school context).

The challenge now exists for our School to support our existing successful phonics teaching with approaches and materials that enhance learning, especially for our target students.

At RidgeView School, we plan to implement a Sensory Phonics Programme that creates opportunities for students to engage in:

- ✓ Gross motor body movements related to their learning.
  - o This could involve activities such as moving through the shape of letters so that students make sound/symbol associations linking the design and configuration both visually, kinesthetically and aurally.
  - o This is likely to include an action based approach to the blending and segmenting of words such as the 'robot' action in Yolanda Soryl's phonics' approach.
- ✓ Small fine motor movements
- ✓ Games and activities that are highly engaging, exploratory and that provide multiple opportunities to reinforce and apply knowledge in varied settings. (e.g. invisible letters, tiny words, tactile bag letter find, car park)
- ✓ Tactile (touch) related activities that explore a range of memorable surfaces.
- ✓ Stimulating phonics knowledge through auditory stimuli using sound either as instructions (verbally scaffolding steps), or an auxilary (background) to trigger memory.

In addition to the above priorities, further useful areas to investigate could be:

- The use of smell (olfactory system) to stimulate senses and prompt memory links for some students.
- Our parents also discussed the importance for their students to learn through singing. It could be interesting to look into this. It will be important to distinguish between learning through song rather than an 'off by heart' approach that is not supported with the necessary understanding for futher learning.

Programmes of note

Jolly Phonics continues to be used across the United Kingdom, Australia and New Zealand.
The United Kingdom has adopted a 'Synthetics' based blending of sounds approach to phonics that is taught in most schools. Australia approaches this through a 'Get Reading Right' programme. Some schools in New Zealand are adopting aspects of these.

It should be noted that most programmes today are heavily supported with ICT software programmes, reinforcement activities and games.

Resulting Actions

As there were no complete Sensory Phonics Programmes identified through the research of this project, the challenge was to align tools to our language acquisition programme.

By combining available tools and designing our own materials, I formed a set of resources that could be used within our experimental programme. These ensured that visual and oral teaching components would now be supported by kinaesthetic and tactile tools.

Implications that were considered

In implementing this Sensory Phonics Programme, the following aspects were considered:

- Which resources would be made and implemented first?
- How would we assess which students would gain most from the intervention?
- Should students be in more than one phonemic intervention at the same time?
- How would we track base line and end point data both in the context of the intervention and in the transference of skills to the classroom context?
- How would we group students based on varied needs?
- How would we incorporate students with moderate to severe special needs?
- Would we use this programme as supplementary to class-based literacy lessons?
- What would be the optimum number of children in each session?
- What should be the length of the programme?
- How would we transition phoneme learning to text as quickly as possible?

Conclusions

The Sensory Phonics Programme has been in place for four weeks at the time of writing this report. In these early stages, the programme is showing high levels of student engagement. All children are transferring learnt phonemes to text within each targeted lesson and showing the retention of learnt sounds following this.

The children have quickly adapted to the structure and fast pace of the programme. The kinaesthetic approach is proving to be the foundation of their new learning. The use of the 'robot' arm actions is providing these children with a kinaesthetic tool that both separates sounds and

blends them together. These are the essential skills needed for reading and writing. One parent reported that her child was transferring this 'action-based segmentation and blending' approach to image words at home (unprompted). At the conclusion of each instructional session all children are able to notate successfully the lesson's phonemes into whole words.

The following weeks will provide greater data related to the retention of learnt skills and the students' ability to transfer new knowledge when reading texts and writing independently in the classroom.

References

Catts, H., & Kamhi, A. Relationship Between Reading and Language Disorders: Implications for the Speech-Language Pathologist. *Semin Speech Lang Seminars in Speech and Language*, 377-392.

Dooner, J. Get Reading Right - The Synthetic Phonics Tools to Read and Spell. Retrieved October 10, 2015, from http://www.getreadingright.com.au/

Hay, I. (2007, September 1). Language delays, reading delays, and learning difficulties: Interactive elements requiring multidimensional programming. *Journal of Learning Disabilities*.

Hunter, J. From school improvement to sustained capacity. *Professional Development in Education*, 693-694.

Implementing mathematical processes in Mathematics in the New Zealand curriculum. (1995). Wellington, N.Z.: Learning Media.

Jolly Learning. Retrieved October 10, 2015, from http://jollylearning.co.uk/overview-about-jolly-phonics/

Kanuka, H., & Anderson, T. (1999). *Using constructivism in technology-mediated learning: constructing order out of chaos in the literature*.

Kiley, C. (2013, June 1). 30 Fun Multisensory Writing Activities! -. Retrieved October 10, 2015, from http://mamaot.com/30-fun-multisensory-writing-activities/

Lloyd, S., & Wernham, S. (1995). *Jolly phonics workbook*. Chigwell, Essex: Jolly Learning.

Martin, D. (2011, November 19). Retrieved October 10, 2015, from http://www.naldic.org.uk/Resources/NALDIC/Professional Development/Documents/NC19_Martin_Dyslexia_in_multilingual_contexts.pdf

Miskin, R. The Read Write Inc. Programmes. Retrieved October 10, 2015, from http://www.ruthmiskin.com/en/read-write-inc-programmes/

Multisensory Structured Language Programs: Content and Principles of Instruction. Retrieved October 10, 2015, from http://www.ldonline.org/article/6332/

Numeracy in New Zealand: Moving on: The 2007 research findings. (2008). Wellington, N.Z.: Published for the Ministry of Education by Learning Media.

Pirie, S., & Kieren, T. Creating constructivist environments and constructing creative mathematics. *Educational Studies in Mathematics Educ Stud Math*, 505-528.

Pirie, S., & Kieren, T. Growth in Mathematical Understanding: How Can We Characterise It and How Can We Represent It? *Learning Mathematics*, 61-86.

Rose, J. Rose Report. *Independent Review of the Teaching of Early Reading - 2006*. Retrieved October 10, 2015.

Scarborough, H. S. (2005). *Developing relationships between language and reading: Reconciling a beautiful hypothesis with some ugly facts*. In H. W. Catts & A. G. Kamhi (Eds.). The connection between language and reading disabilities (pp. 3–24). Mahwah, NJ: Erlbaum

Soryl, Y. *Developing phonological awareness: The six key phonological awareness skills for success in literacy : A handbook for teachers, parents and carers of the under fives.*

Soryl, Y. Yolanda Soryl Literacy - NZ Early Literacy Resources. Retrieved October 10, 2015, from http://www.yolandasoryl.com/

Stanovich, K. E., & Beck, I. (2000). *Progress in understanding reading.* New York: Guilford Press