

USING RHYTHMIC MOVEMENT TRAINING IN THE CLASSROOM TO IMPROVE STUDENT ACHIEVEMENT AND BEHAVIOURAL OUTCOMES.

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Purpose

To investigate contemporary neuroscience conclusions in the school setting. I will research the conditions, environments and events that impact on a developing brain and how these experiences affect children. I will research the indicators that principals and teachers can use to identify vulnerable children, and suggest some interventions that may meet the developmental needs so they can move into a more ready state for learning.

What are the conditions, environments, and events that impact on a developing brain and why does it appear that not all brains develop in a similar neurosequential progression?

What are some of the indicators that may suggest to educators there may be a neurological basis to the problem?

Background and Scope

The findings from the previous 3 years Whole School Inquiries have led us to consider that the barriers to learning for a cohort of our children stem from delayed brain development and anxieties as a result of previous experiences.

Neuroscience can help us to learn how these experiences affect children. This knowledge can aid our efforts to help children who are at risk and to undo, where possible, the effects

of early adversity. It can help us respond to learners in an adaptive way that matches their stage of brain development, and to provide appropriate learning experiences for them.

Through our Strategic Plan and as a result of these findings, we are reviewing our school curriculum to promote inclusive practices that meet the needs and abilities of all learners. We are investigating a variety of programmes and practices that better cater to the hauora of all tamariki, including those who have delayed brain development as a result of trauma or other experiences, and those who have a hyperactive amygdala.

These programmes include an emphasis on Learning through Play for our junior children and a range of experiential programmes such as Enviroschools for all our learners. We know these programmes are gaining momentum in many schools so we want to ensure that we understand and contribute to the research behind these programmes to benefit children as this knowledge becomes more widespread.

As staff we have found the research and ideas in this area immensely interesting and relevant. At this stage we still have more questions than answers, which is a key reason why I want to spend some quality time finding out more so I can support my staff, our tamariki, and their families.

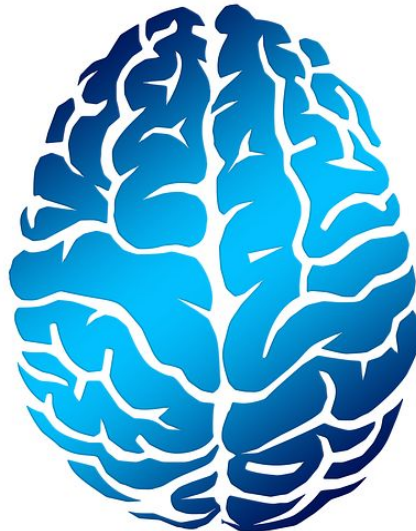
As I began this sabbatical work, I soon became swamped in material available on many aspects of neuroscience as it relates to classroom practice. There are dozens of recent sabbatical reports on anxiety, wellbeing, the place of play-based learning, and its effect on the developing brain, growth mindset, mindfulness, emotional development, neuroplasticity..... The internet burgeons with similar topics: brain architecture, the first three years, self-regulation, the effects of early childhood trauma, cognitive behavioural theory etc.

Where to start?? Humming away in my own head was the mantra 'rhythm of life, rhythm of life, rhythm of life'. My observations from 40 years in education were leading me to consider that children are encountering fewer opportunities, especially in their early years, to stay tuned to the rhythm of life. We have children coming to school with no knowledge of nursery rhymes, simple hand and finger games, chants and tunes. In many of these children, coordination is lacking and kinaesthetic awareness is patchy. Fundamental locomotor skills such as marching and skipping are often difficult for these children, as are many fine motor skills. Many of the same children that find learning difficult, struggle to stay focussed and seem to have relational and behavioural issues, and often high levels of anxiety. Having always been an 'active' learner myself, I had a hunch there was a link between physical activity and learning.

I re-focussed my inquiry to concentrate on finding research describing when physical movements had been used to support the developing brain. In doing so, I came across a number of references to Rhythmic Movement Training (RMT). RMT is used to integrate

primitive reflexes that had been retained past their normal integration period, resulting in delayed physical, mental, and emotional development.

For this sabbatical report, I have refined my scope of inquiry to ask a principal question and some supplementary questions. This is a useful way to present the information for principals and teachers.



HOW CAN RHYTHMIC MOVEMENT TRAINING BE INCORPORATED INTO THE CLASSROOM SETTING AS AN INTERVENTION THAT WILL RESULT IN IMPROVED LEARNING AND BEHAVIOUR OUTCOMES?

What is Rhythmic Movement Training?

Rhythmic Movement Training is an internationally-recognised programme of exercises that was developed to aid the integration of retained primitive reflexes. It was designed by an Australian teacher and educational kinesiologist, Moira Dempsey, and Swedish doctor Harald Blomberg.

The RMT programme is based on observations made by Swedish therapist Kerstin Linde as she worked with developmentally-delayed children. Although Linde's work is not published, Blomberg and Dempsey used her observations and conclusions to develop the RMT programme (Blomberg & Dempsey, 2011). Linde noticed that the typical rhythmical movements made by babies as they played on the floor were missing from children with delays. (T Griggs 2017) It is the rhythmic aspect of the programme that differentiates it from other movement based programmes and provided the appeal for me in my quest to reestablish 'the rhythm of life'.

Another distinguishing factor is that RMT seeks to address the underlying cause of the behavior or learning difficulty using a 'bottom-up' approach rather than a 'top-down' or deficit-based intervention - the child is having difficulty with maths so we'll give him/her more maths to overcome the difficulty.

What are retained primitive reflexes?

Primitive reflex movements develop very early in-utero and originate in the neophyte brainstem. They are important in aiding the birth process, facilitating infant feeding and to provide the basic training for future voluntary skills. The movements build patterns of neural networks and pathways of connection within the brain. These patterns and pathways form part of the child's neurophysiological development and are the roadmap for learning, behaviour, communication, relationships, and emotional development.

These reflexes are involuntary reactions. Unlike other involuntary reflexes such as breathing, this set of primitive reflexes usually integrate during the birthing process or during the first 12 to 18 months of an infant's life. An example of one such reflex, familiar to many parents, is the infant startle or Moro reflex where a frightened baby will fling their arms back. The reflexes and their indicators are described in more detail later in this report.



During a typical child's growth and development, these reflexes integrate and processes and movements become voluntary and controlled. However, in some cases, these reflexes remain unintegrated and 'active'. If these reflexes fail to integrate, normal development is interrupted and maturation of the neural systems fails to occur, leading to learning, emotional, movement, and behavioural difficulties.

What causes primitive reflexes to be retained?

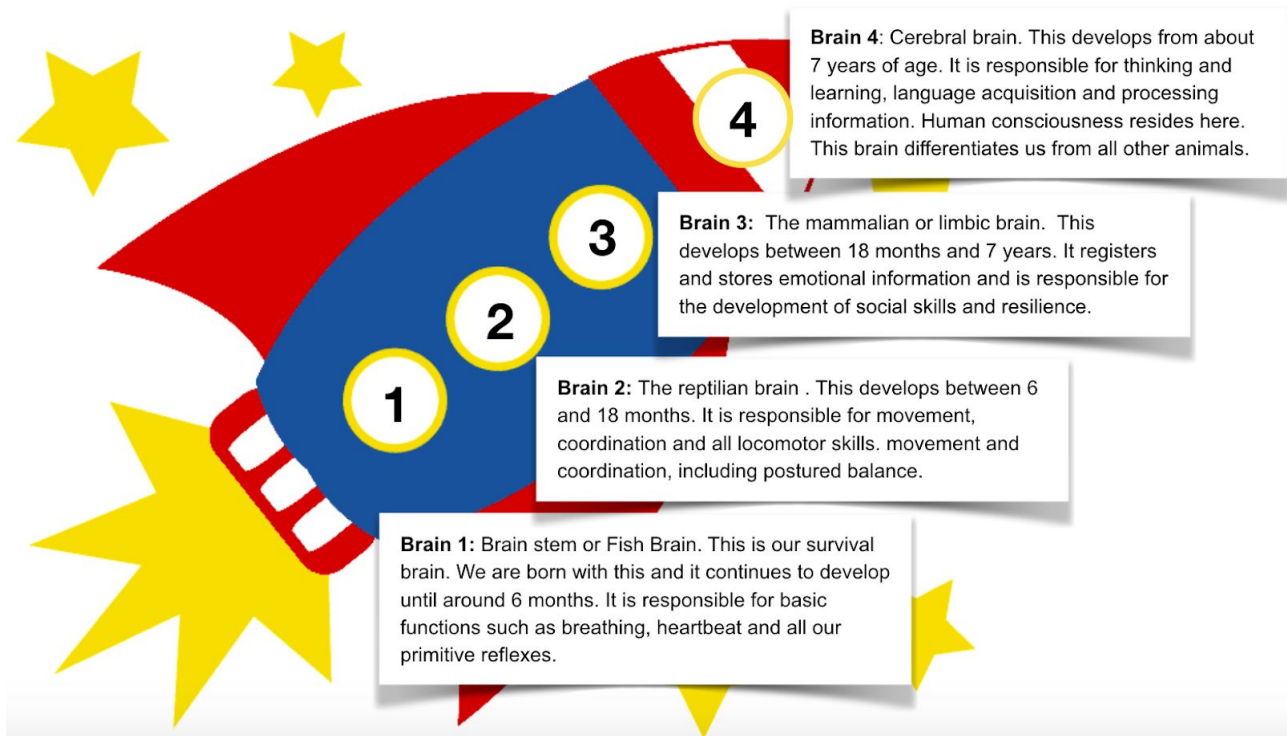
Some possible causes may be:

- Stress of the mother during pregnancy
- A stressful birth procedure e.g. breech birth or caesarean
- Restricted movement as a baby e.g. placed too often in 'jolly jumper' or being left for long periods of time in car seats, baby carrier
- Placed in front of screens e.g. TV or Ipad in restricted movement position
- Prolonged illness or injury
- Trauma during early months
- Environmental toxins
- Dietary issues

How is the brain built and when do primitive reflexes develop ?

Brain cells begin to develop in an embryo 3 weeks after conception. By 7 weeks, the brain stem is developing and the neurons responsible for the development of the primitive reflexes emerge. The embryo's movements are now determined by these reflexes.

Brains take time to develop and are built in a specific sequence from the bottom up. Brain development begins shortly after conception and continues into our mid 20's. I like to think of a brain being like a rocket with a command module on top - if we don't get the launch stages sequenced correctly, we don't get to where we want to go! Retained primitive reflexes are a prime example of where sequencing has been interrupted.



The brain stem and primitive reflexes continue to develop gradually in the foetus and must be ready to function adequately when the baby is born. The vestibular, kinaesthetic, proprioceptive, visual, and tactile senses all begin to develop in the weeks after conception. As they develop, the foetus begins to move and develops some spatial awareness. Limbs move, the thumb is sucked, the head turns and fingers flex and grasp. Despite these senses providing the unborn child with the capacity to perform some movements, they operate in an environment vastly different to that in which the newborn baby finds itself.

Once born, the baby's movements change completely. Gravitational conditions outside the womb mean the baby no longer knows the position of his body or how to regulate movement. They are a fish out of water! To recapture these beginning senses, the newborn must re-establish their movements - now on dry land.

To do this, the baby relies on its primitive reflexes to react to stimulations. Stimulations of rocking, touching, holding, feeding and being able to ‘wriggle’ re-establish the senses and provide the opportunities the baby needs to develop a connection and relationship between his/her head, body and the world around him/her.



What are the primitive reflexes and what is their purpose?

As mentioned earlier, primitive reflexes are involuntary reactions active from before birth and usually up to the first year of life. They are processed in the brainstem. Their purpose is to aid in the birth process, enable feeding, and provide the capacity for future voluntary skills. The inception and integration of each reflex is related to age and assists the development of mature neural networks in the cortex.

Although there may be as many as 15 of these primitive reflexes, for the purposes of this sabbatical work and the impact they have on children’s learning and behaviour, I am going to focus on nine. Six of them have strong relationships to focus, organisation, and learning and three of them have stronger links to emotions and behaviour.

Reflex	Purpose
Tonic labyrinthine reflex (TLR)	Basis for head management. Helps prepare an infant for rolling over, creeping, crawling, standing and walking. Initiated when you tilt an infant’s head back whilst placed on the back, causing legs to stiffen, straighten and toes to point. Hands become fisted and elbows bent. Should integrate gradually as other systems mature and should disappear between 2 to 3 years of age.
Landau	Important for establishing coordination between upper and lower body. Important for forming the ability to reach out and bring things back in to centreline - stretching and extending. Begins integrating between 7 to 9 months and continues up to 2 to 3 years of age.
Asymmetrical tonic neck reflex (ATNR)	Initiated when laying baby on back and turning head to one side. Arm and leg of the side they’re facing should extend, while the other side bends. Reflex is a precursor to hand eye coordination. Should integrate by 6 months.

Symmetrical tonic neck reflex (STNR)	Crawling reflex. Present briefly after birth and then reappears around 6 to 9 months. Helps body divide in half at midline to assist crawling. As the head is brought to the chest, arms bend and legs extend. Should integrate by 11 months.
Spinal Galant	Activated in infants by stroking the skin along the side of the back. The infant will swing towards the side that is being stroked. Reflex helps with birthing and should integrate between 3 to 9 months.
Infant Plantar and Babinski	They work together in preparation for standing upright and walking. The plantar reflex teaches the toes to curl under and the babinski teaches the toes to stretch out. They help the baby crawl, stand and walk in a coordinated way. They also help establish laterality and understanding of left and right. Plantar should integrate between 7 to 9 months and Babinski between 12 to 24 months.
Fear paralysis reflex (FPR)	Earliest stage of a defense mechanism - teaching how to be safe in the world. Transforms into the Moro and this process should be complete by 32 weeks. This is the reptilian response to stress - shut down and immobilisation - 'Freeze'.
Moro	Primitive fight / flight reaction. Should be replaced by adult 'startle' reaction by 4 months old. During this time, the body is developing its nervous system. If it does not develop well, long-lasting anxieties may prevail. The body stays on alert and this leads to many challenges and adverse behaviours.
Babkin	The Babkin provides a hand / mouth connection. Integration lays down the foundation for speech, language and communication skills. Ideally it integrates between 2 to 4 months.

What are the indicators that a primitive reflex has been retained, how is it tested for, and what are the movements that can support integration?

The movements indicated here are a very small sample of those available. These are the ones used in a research project mentioned below and are described later on in this report.

Reflex: Moro	
Retention may result in:	
<ul style="list-style-type: none"> ● Poor muscle control ● Hypersensitivity to light or sound ● Hyperreactivity ● Sensory overload ● Anxiety ● Overly emotional 	<ul style="list-style-type: none"> ● Poor coordination ● Easily distracted ● Does not adapt well to change ● Vision difficulties ● Mood swings ● Blinking a lot

<ul style="list-style-type: none"> ● Socially immature ● Motion sickness ● Poor balance 	<ul style="list-style-type: none"> ● Unable to hold gaze ● Difficulty with maths
<p>Indicator Test:</p> <p>(a) Child walks pigeon-toed. The tester is looking for the arms supinating and spreading out awkwardly by child's side.</p> <p>(b) Child stands and crosses feet over at the ankles, arms up in the air. They try to keep balance when bending over to hang arms down over feet. The tester is looking for loss of balance.</p>	
<p>RMT movements to integrate retained reflex:</p> <ol style="list-style-type: none"> 1. Bottom/hip rolling, 2. Knee rock movements 	

<p>Reflex: Spinal Galant</p>	
<p>Retention may result in:</p>	
<p>Retention may result in:</p> <ul style="list-style-type: none"> ● Postural issues ● Affected coordination ● Poor attention ● Fidgeting ● Sensory integration problems 	<ul style="list-style-type: none"> ● Up-close visual difficulties ● Reading difficulties ● Poor short-term memory ● Bed wetting ● Inability to sit still ● Find tight pants uncomfortable
<p>Indicator Test:</p> <p>(a) The child is in quadruped position on hands and knees. The tester shows the child the rounded end of a pen and tells them that they will feel the pen being run down their back. The pen is then run down the back, either side of the spine. The tester is looking for hip and shoulder movement.</p>	
<p>RMT movements to integrate retained reflex:</p> <ol style="list-style-type: none"> 1. Sliding on the back 2. Bottom/hip rolling 	



Reflex: Palmar / Grasp	
Retention may result in:	
<ul style="list-style-type: none"> ● Difficulty with fine motor skills ● Poor manual dexterity ● Unusual pen grip 	<ul style="list-style-type: none"> ● Shoulder tension ● Sticks out tongue while writing ● Messy printing / handwriting
Indicator Test: (a) Using rounded end of pen, stroke child's palm. The tester is looking for the grasp reflex.	
RMT movements to integrate retained reflex: 1. Knee rock movements 2. Bottom/hip rolling	

Reflex: Asymmetrical tonic neck reflex (ATNR)	
Retention may result in:	
<ul style="list-style-type: none"> ● Poor hand-eye coordination ● Difficulty with printing / handwriting ● Difficulty crossing visual midline ● Poor visual tracking for reading and writing ● Difficulties telling time ● Left / right confusion 	<ul style="list-style-type: none"> ● Difficulties with reading ● Delayed dominance development ● Visual perception problems ● Difficulty getting ideas out of head onto paper ● Letter reversals
Indicator Test: (a) The child stands with feet together and hands by sides. The tester demonstrates, arms straight out in front at 90 degrees to the body, eyes closed and then turn the head slowly to one side and then turn the head slowly to the other side while keeping arms still. The tester is looking for movement in the arms when the head is turning, and the child's ability to keep their balance.	
ned reflex: 1. Windscreen wipers 2. Knee rock movements	

Reflex: Tonic labyrinthine reflex (TLR)	
Retention may result in:	
<ul style="list-style-type: none"> ● Poor muscle tone - skinny arms and legs ● Tendency to walk on toes ● Motion sickness ● Poor balance ● Poor posture ● Difficulty judging space ● Poor sense of time ● Poor sequencing skills, ● Poor organisation skills 	<ul style="list-style-type: none"> ● Dislike of sports ● Spatial orientation issues ● Binocular vision ● Poor sense of timing ● Clumsiness ● Get to the end of a page before they get to the end of a word ● Squish all information into one corner of a poster!
<p>Indicator Test:</p> <p>(a) Child stands, feet together, hands by sides. Close eyes and tilt head back as if looking at the ceiling, (10 secs) slowly tilt head forward as if looking at toes, (stay in position for 10 secs). Repeat 4 times. Tester is looking for balance disturbance, disorientation, significant muscle tone change, dizziness, nausea.</p>	
<p>RMT movements to integrate retained reflex:</p> <ol style="list-style-type: none"> 1. Knee rock movements 2. Sliding on the back 	

Reflex: Symmetrical tonic neck reflex (STNR)	
Retention may result in:	
<ul style="list-style-type: none"> ● Poor muscle tone ● Bum shuffling ● Tendency to slump while sitting ● Inability to sit still and concentrate ● Poor hand-eye coordination ● Difficulty eye tracking ● Poor posture ● Sits on floor in 'W' position 	<ul style="list-style-type: none"> ● Slumps at desk and uses arm to keep head up ● Difficulty focussing ● Difficulty adjusting focus from near to far ● Reading difficulties ● Trouble with sports ● Difficulties learning to swim
<p>Indicator Test:</p> <p>(a) Child is in quadruped position on hands and knees. Shoulders and hips flexed to 90°, elbows extended, hands flat, fingers extended, head in neutral position. Head passively bent and extended. The tester is looking for shaking arms, elbow movements, bending of arms, rocking back to sit on heels.</p>	

RMT movements to integrate retained reflex:

1. Windscreen wipers
2. Bottom/hip rolling



How do children with retained reflexes cope in a classroom?

Challenges created by retained reflexes often manifest by children having difficulty keeping up with their peers. Some develop coping strategies, many 'just get by' or only succeed with great effort. Those children most able to cope develop techniques for compensation. Many end up with specialist interventions that still have limited success. They are often our 'conundrum' children. These children often present as having behavioural or attitudinal issues - usually out of sheer frustration and they carry this frustration through into their teens and adulthood. Learning is a struggle, the effort is tiring, and limited success is debilitating.



Why consider RMT as a classroom intervention?

Schools in New Zealand plan interventions to address children's achievement and behavioural challenges. When an intervention is planned, principals and teachers consider:

- Is it a practical intervention in our setting?
- Is it easy to administer?
- Is it easy to assess?
- Is it cost-effective?
- Is it space-efficient?
- Is it engaging for children?
- Does it work!

The research described below suggests the answer to all of these questions is 'Yes!'

Has RMT been used as a classroom intervention and, if so, what were the results?

Research work completed by Tessa Griggs:

Tessa is a Christchurch-based teacher and kinesiologist who completed her doctoral thesis in 2017 researching RMT in the classroom. I met with her to discuss her research, findings and conclusions. As a classroom teacher herself, Tessa understands the demands of a classroom and the impact of teacher workload. Her work is relevant, useful and very readable! I have cited her work (*Griggs, T 2017*) throughout and have included a link to her full thesis document in the bibliography.

"I am pragmatic and am interested in what is useful, what 'works' and what is practical."

(Griggs,T 2017)

She began with a principal question and 4 supplementary questions.

1. What influences does the use of Rhythmic Movement Training (RMT) have in a classroom?
 - a. From a teacher's perspective, how does RMT facilitate the achievement of curriculum goals?
 - b. From a teacher's perspective, how can RMT be managed within the physical classroom space?
 - c. What influence does participation in an RMT programme have on student achievement in reading, writing and mathematics?
 - d. What influence does participation in an RMT programme have on student behaviour: social and emotional?

Methodology of Griggs' research into RMT in the classroom

The cohorts

Griggs' research was carried out in 3 schools - a decile 2, a decile 5 and a decile 9. Each school included control and intervention groups, as evenly matched as possible.

Ninety-eight children took part in the research for the whole year. This included 52 in the intervention group and 46 in the control group. The children were all in Year 2 to Year 4 classes although most of the children were Year 3.

The Tests

Students were tested 3 times during the year of the intervention - beginning, midway and an end test. The tests included were:

Reading *	PM Benchmark, Running Records and OTJs aligned with National Standards.
Writing *	e-asTTle marking scale, schoolwide records and OTJs aligned with National Standards.

Maths*	IKAN, NumPro, JAM, Gloss and OTJ's aligned with National Standards.
Reflex Tests	Tonic Labyrinthine Reflex, Asymmetrical Tonic Reflex, Spinal Galant Reflex Goddard-Blythe (2005) and Grzywniak (2017), McPhillips et al. (2000; 2004), Jordan-Black (2005), Konicarova and Bob (2012)
Cognitive Development	Draw-A Person Test (DAP) Goodenough (1931) Lange-Küttner, Küttner, & Chromekova, 2014; Merriman & Guerin, 2006; Williams, 2015; Sisto (2000)
Social and Emotional Development	Strengths & Difficulties Questionnaire (SDQ) (Completed by teachers and some parents about children participating)

*Not every school used every test every time but the inclusion of OTJs provides for consistency.

Participation requirements:

A key factor was that the research would not add significantly to the teacher workload. Therefore, their commitment was to use testing normally completed within their classrooms, and the Strengths and Difficulties Questionnaire being the only additional test they were required to complete. They were also required to implement five minutes of RMT in their classroom each day. Other tests and interviews were carried out by the researcher. The children completed normal school-based testing, as well as the reflex tests and DAP tests and they completed five minutes of RMT each day.

The Intervention

The intervention used was the Rhythmic Movement Training programme, carried out in participating classes with participating students. The movements were easy for teachers and students to learn and did not require specialist equipment. Children enjoyed an element of choice throughout the programme although the framework planned by teachers ensured all movements were completed within timeframes and meant children could not just avoid the movements they liked least in favour of their preferred items.

Teachers were encouraged to use the movements daily for approximately 5 minutes in total. Only four of a possible 17 movements were used. This was to minimise teacher loading of new information for the research process.

The four movements chosen were:

- Sliding on the back,
- bottom/hip rolling,
- windscreen wipers and
- STNR knee rock movements.

These were taught in the first four weeks, one movement each week. All these movements have a passive and an active version which allows for teacher assistance if needed.

(Griggs, T 2017)

It is important to note that the researcher sought and gained permission from Moira Dempsey (Rhythmic Movement Training International organisation) to teach the teachers the specified movements. Monitoring that the movements were being carried out correctly during the intervention was also carried out.

Descriptions of the movements used are recorded later in this report.

Results of Griggs' research

For full results of Tessa Griggs' research, please refer to her doctoral thesis. I am reporting qualitative data as it is easier to process.

Teacher Voice:

The seven teachers interviewed by the researcher reported that:

- children had made good to very good gains over the year, and for many, the gains were greater than expected
- noticeable changes in reading skills were supported by statistically significant differences detected between the children using RMT for four or more times per week and those using RMT fewer than four times per week
- children made some neurological gains as assessed through the DAP test (Draw a Person.)
- children made some gains in mathematics and writing but no statistically significant difference was detected between the control and intervention groups
- statistically significant differences were detected between frequency groups in relation to social and emotional difficulties
- movements are easy to use within the classroom
- kids enjoy it, ask for it and can eventually run the programme themselves
- it has a calming effect on children

Parent Voice:

The seven sets of parents interviewed by the researcher reported that:

- They believed their children benefited from using the movements.
- They said they could easily manage the movements within their family routines and RMT was considered a low-impact, cost effective intervention.

(Griggs, T 2017)

How does RMT promote pre-literacy skills and have a beneficial impact on children experiencing difficulties with reading and writing?

Reading and writing involve physical and neurological skills. Children need to sit still and focus their eyes for reading - retained primitive reflexes make those skills challenging. Children with reading difficulties often have corresponding muscle tone issues. Increasing physical movement opportunities benefits these children.

From an early age, we expect children to hold a writing tool and concentrate their efforts writing between the lines provided. When primitive reflexes such as retained Palmar grasp are present, this makes these focused movements very difficult. If the physical writing process is too challenging, children lack engagement and despite best intentions of 'practice makes perfect', the desired outcome will not happen as quickly as if the reflexes were integrated.

The results of Tessa Griggs' research showed that there was a significant improvement in children's reading and writing results amongst the children using RMT four times a week. If children find reading and writing easier, they are more likely to engage more with the process and further improvement becomes part of the cycle. In our schools where children are engaged in an intervention such as reading recovery, it is obvious to them that a deficit has been identified and this in itself can work against improvement. However, when the whole class is engaged in RMT, no child is singled out. Everyone benefits from the exercises and if it has particular benefit for those experiencing literacy difficulties, they are not consciously aware unless a more substantial home-school programme is developed.

How does RMT promote whole child development?

RMT helps children improve their physical, social, and emotional wellbeing. As teachers, we may observe improvement in core subjects such as reading, writing and maths. However, the child who is developing more brain maturity as a result of RMT, may be placing a higher value on their improved sports skills or ability to communicate more effectively and thus benefit from improved relationships.

Improved self-confidence and self-esteem were reported by parents and teachers and an improvement in overall maturity strengthened relationships both within the school setting and at home. Children who had been part of the RMT intervention were also able to learn the skills of and practice self-regulation more readily. Problem-solving strategies increased in many children and being able to collaborate with peers using negotiation and effective communication skills was also more evident in the groups participating in RMT.

'The holistic approach associated with RMT is a strength of the programme. Vygotsky believed that social interaction, culture and language play an important role in children's social and emotional development. He saw children constructing their knowledge and understanding through participation within a group. It was shown that while using RMT children's social and emotional challenge scores reduced.'

(Griggs, T 2017)

Summary from Griggs' research

Factors that make RMT a good option for an intervention:

- It's cost-effective.
- It's easy to access for all students.
- The use of an intervention with the ability to improve literacy and numeracy skills, increase vocabulary, and develop social and emotional skills is of value within a curriculum that promotes the wellbeing of the whole child.
- RMT provides calm and 'mindful moments' which supports research finding that mindfulness is effective in reducing stress for children.
- The movements are repetitive and easy to remember.
- Just a brief period each day is needed to achieve results.
- It does not require special equipment or lots of space.
- The intervention is beneficial to all children including those with minor challenges and those who do not reach the threshold of skill deficit to qualify for state-funded intervention.
- Children are not made to feel different or singled out in any way.
- RMT movements fall within the health and physical education competencies of the NZ Curriculum and can increase children's physical abilities and muscle tone.

Conclusions from Griggs' research

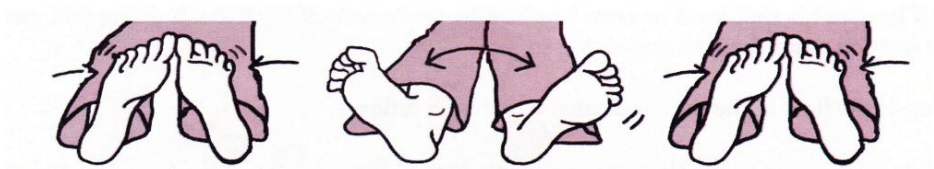
Tessa's research concluded that the children involved in the intervention had made good to very good gains over the year in both learning and behaviour. For many, the gains were greater than expected, especially in reading and writing. Emotional and social challenges decreased, making it easier for teachers to engage the children in learning. The children enjoyed the physical activity and completed the exercises in a calm and mindful manner. The investment of time and resources was minimal, implementation was easy and engagement was high.



The RMT Movements

Up to 30 movements are catalogued as part of the RMT programme. Some passive, requiring a helper and some active that can be completed by oneself. Griggs used four main movements in her programme and these are described below:

Windscreen Wipers: Children lie flat on the ground with their backs on the ground, legs stretched out. The feet are together. They are asked to move their feet in a windscreen wiper fashion, both in and then both out. They are encouraged to involve the whole leg, and, to check they are doing that, they put their hands on their hip bones and they should feel movement. Children are checked to make sure they are moving their legs evenly and rhythmically.



Hip/Bottom Rolling: Children lie on their fronts, stretched out. They are asked to move their hips from side to side. The feet and shoulders need to remain still. To achieve this the movement will be very small. Children are checked for evenness of movement and stillness of feet and shoulders. The movement should be rhythmically even.

STNR Rock: Children kneel and sit back, hands are placed on the ground in front. Children make a rocking action, similar to the backwards and forwards rocking action a pre-crawling child makes. Children are checked for feet flat on the ground, hands flat on the ground and even rocking. The rocking needs to be rhythmically even.

Sliding on the back: Children lie on their backs, knees bent. Using their legs and feet, they make small sliding movements. The movement is small and essentially they are moving backwards and forwards inside their skin. The head needs to nod, and the fingers will move up and down a little when the movement is fluid and the rocking is rhythmically even. This is the most challenging of the movements and is best taught after the first three are established.

(Griggs, T 2017)



Rhythmic Movement Training International (RMTi) Courses

As I read through Tessa's work, spoke with her and other colleagues, and identified children in our school that exhibited signs of retained reflexes, I wanted to know more. Tessa recommended I take a course. Fortuitously, there was a course in New Plymouth, right at the end of my sabbatical term. This 3 day course covered the Level One and Two material for Rhythmic Movement Training knowledge and practice.

The courses are part of the RMTi (Rhythmic Movement Training international) programme developed by Moira Demsey and these two courses were facilitated by Australian presenter, Evonne Bennell. RMTi Level One, covered 'Focus, Organisation and Comprehension - reflex foundations for postural stability and organisation', and RMTi Level 2 covered 'Emotions, Memory and Behaviour - reflex foundations for emotional stability and organisation.'

The course was well-attended by Teachers, Occupational Therapists, Speech Language Therapists, and Tomatis Practitioners.

Over the three days, we were presented with a wealth of information about reflexes and senses in human development, some stressors that may affect a normal integration pattern, how to observe and test for retained reflexes and how to perform the active and passive movements that lead to re-integration.

Conclusion

As a result of this sabbatical, including the reading, the conversations, the course and the practice of the movements, I feel confident that the Rhythmic Movement Training programme will be of benefit to the children in our school. We will incorporate the movements into our daily programme in 2020. We have decided that our whole school inquiry for 2020 will focus on using practices derived from the neurology of learning to respond to learners requiring additional help to meet individual curriculum goals. RMT will be one of those practices.

As part of the Puketeraki Kahui Ako, I will also share this work with my colleagues as it fits with our work around our Āhuatanga Whaiaro (Valued Attributes), supporting our student and teacher wellbeing and development.

The journey of this sabbatical has been interesting in that I started with some curiosity, some observations and ideas, a little bit of knowledge around the neuroscience of learning and a hunch that 'the rhythm of life' played a bigger part in children's learning and behavioural development than we perhaps give credit for. I certainly had never heard of Rhythmic Movement Training or even infant reflexes. Whether I can implement it successfully to help our children overcome some difficulties and become happier more confident in learning and in life remains to be seen. However, the passion and belief that

I've seen in those that have experienced success with this programme inspires me to try to do the same. An intervention that is practical, easy to administer, easy to assess, cost-effective, space-efficient, engaging for children and has evidence that it works is certainly worth trying.

Bu Windsor
December 2019

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