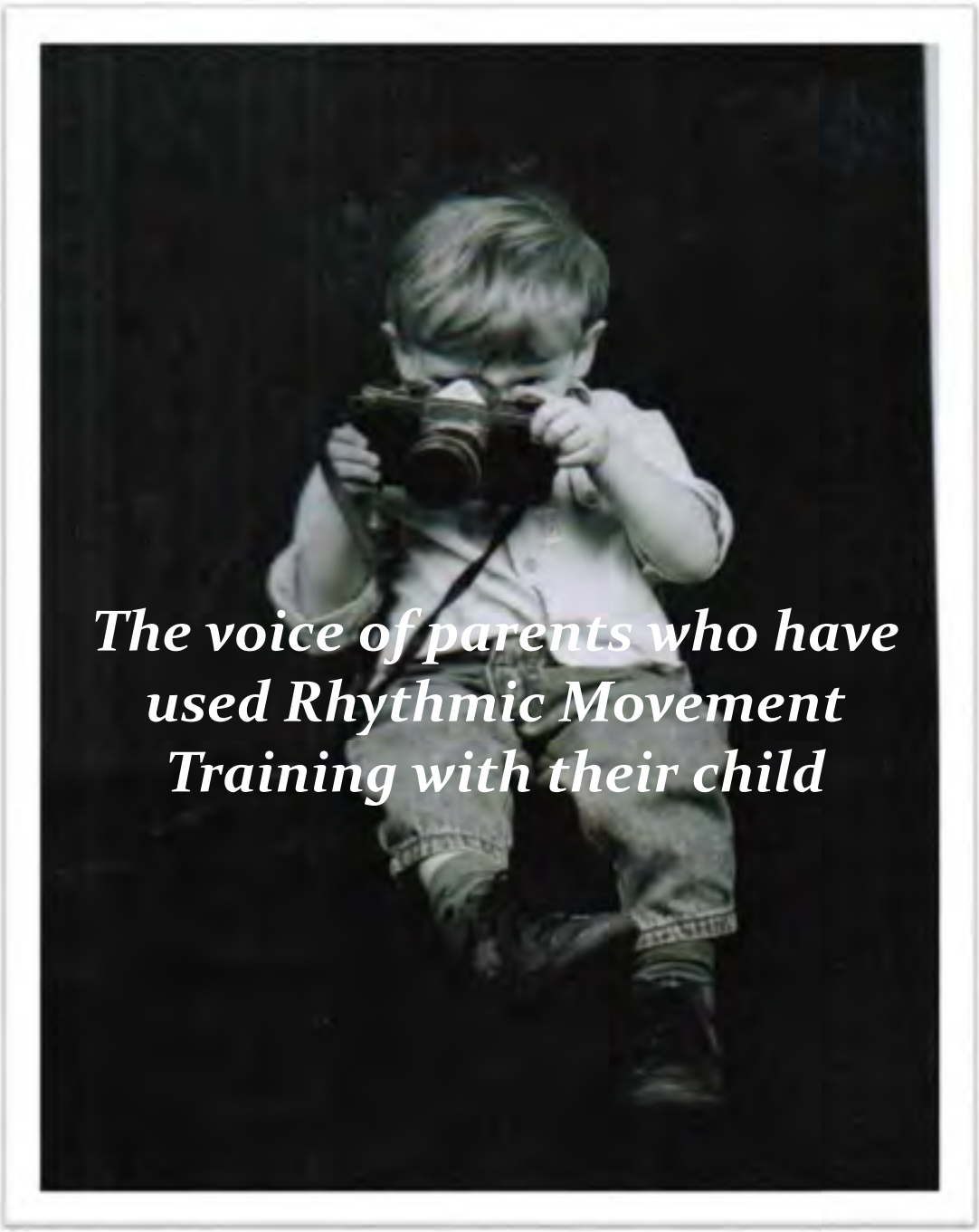


The voice of parents who have used Rhythmic Movement Training with their child

A thesis submitted in partial fulfilment of the requirements for the Degree of Master of Education

University of Canterbury

College of Education, Health and Human Development

Tessa M Grigg 2016

Table of Contents

Table of Figures

Acknowledgements

Thanks to
Wendy and Ian for their guidance and wisdom
The families for their time and willingness to participate
Drew for endless support and encouragement
and Harry - for just being Harry

Abstract

This study investigates the experiences of seven families who have used Rhythmic Movement Training (RMT) as an intervention with their child with retained primitive reflexes. The theoretical framework of phenomenology and interpretivism was the basis for a qualitative phenomenological research design used to gather and analyse data. Four RMT practitioners in New Zealand were invited to nominate families who were willing to participate in one semi-structured interview. The collective voice of 14 parents captured their reasons for seeking additional help with their child's development issues, finding RMT, using RMT within their family routine and their perceptions of the benefits they experienced and the costs, both financial and time, incurred. RMT is a programme which uses a series of movements to encourage the integration of retained primitive reflexes. While there is a small amount of research around movement programmes that target retained primitive reflexes, to-date there appears to be no empirical studies completed on RMT.

The parents in this study found that RMT was relatively easy to manage within their family routine and that it was a low-impact, cost-effective intervention with a range of perceived benefits for the child who had completed RMT.

Further study into the efficacy of RMT would be beneficial with the understanding from this study that the programme is perceived as manageable within a family routine by this group of families.

Abbreviations

ADD	**Attention Deficit Disorder**
ADHD	Attention Deficit Hyperactivity Disorder
ATNR	Asymmetric Tonic Neck Reflex
FPR	Fear Paralysis Reflex
INPP	The Institute of Neuro-Physiological Psychology
RMT	Rhythmic Movement Training
STNR	Symmetric Tonic Neck Reflex
TLR	Tonic Neck Labyrinthine Reflex
SES	Socio-Economic Status
ECE	Early Childhood Education

Transcript information

In reproducing quotations from transcriptions in Chapter 4, intended meanings were clarified by the deletion of superfluous speech such as repetitions, fillers and speech disfluencies. However, care was taken to maintain the essence of the text.

Pseudonyms have been used through the thesis and at the end of a quotation brackets are used around the speaker's name e.g. (Gemma). When the addition of a word replaces a gesture or implied word, square brackets are used. Identifiable names are replaced e.g. [RMT practitioner]. Three dots are used to indicate that some of the dialogue has been excluded e.g. "for the disabled...Only." Long quotations are indented.

> We have done riding for the disabled...Only two years ago we did the Davis Autism Programme So [RMT practitioner] would explain [the reflex] to me, she would get Catman to do something [that] would show the reflex, that it was still there and then she would work with him and it would go. ... I know categorically, I saw him still do it, I saw her do something with him and he stopped doing it. (Gemma)

Chapter 1. Why research retained primitive reflexes?

1.1. An introduction

It is acknowledged that primitive (also known as infant, or primary) reflexes play a significant role in the development of a child (Damasceno et al., 2005). The issue of retained reflexes needs consideration, with estimates of up to 48% of children having some level of retained reflexes (Blythe, 2005) and research (Konicarova & Bob, 2012; McPhillips & Jordan-Black, 2007b; McPhillips & Sheehy, 2004) showing links between retained reflexes and cognitive and behavioural outcomes for children.

Rhythmic Movement Training (RMT) (Blomberg & Dempsey, 2011) is a programme of exercises that was developed to aid the integration of retained reflexes. The exercises can be completed at home and require very little, if any, equipment.

The parents in this study chose to use RMT as an intervention for an identified developmental or behavioural need in their child. While the study started with an aim of finding out what parents thought about RMT, as the data emerged it became clear that the story these parents told was about looking for help for their child, the stress and frustrations associated with the search for help, the range of interventions they tried, including RMT, in their attempt to achieve the best outcome for their child.

1.1.1. Aim of the project

The aim of the research was to give a voice to parents who have used RMT with their children, with a focus on their perceptions of the investment of time and resources relative to perceived outcomes achieved.

1.1.2. Research questions

The over-riding research question for this study is:

What are the experiences of parents who have used Rhythmic Movement Training (RMT) with their child?

To answer the research question the following supplementary questions were asked:

- What path led the family to RMT?
- How did completing the RMT exercises affect the household routine?
- What changes were noticed in the child's development while they were using RMT?
- Did the actual investment of resources (time and financial) match the anticipated input into RMT?
- Did the effect of RMT match the input of resources?

1.1.3. Researcher interest in the topic and pre-study understandings

With over 30 years teaching experience, the author of this study developed an interest in the way children learn through her teacher training and specifically through a course in Sensory Motor Integration with Prue Kernahan at Christchurch Teachers College in the late 1970's. The information Kernahan presented from American movement specialists Glen Doman (Doman, Doman, & Hagy, 1988) and Jack Capon (Capon & Alexander, 1975) sparked a life-long interest in the brain, it's development and the relationship between development and movement. At the Philadelphia Institute in the 1970's, Doman worked with brain-injured children and gained positive results with the intensive movement programmes used. The author considered the idea that if these programmes could achieve results with brain-injured children, there must be a way to work successfully in this area with children who were simply having minor learning difficulties.

Teaching adult students, primary and pre-school children brought the author of this study to the conclusion that many of the principles of learning and movement apply in all areas. In 1995, the purchase of a GymbaROO centre increased the author's interest in movement, music and brain development. Williams (2015) introduced the concept of Primitive

Reflexes at a GymbaROO conference in 1996 and the idea that these reflexes could be retained and then create immaturities for children gave a possible explanation for issues encountered with children and adults in the educational field. As a registered teacher (music and movement specialist) and Kinesiologist (Registered Natural Therapies Practitioner), the author sees many children, and one of the greatest puzzles has been learning and behavioural challenges of children where the reasons for the difficulties are unclear. A child may have many recognised protective factors (Cicchetti, Toth, & Maughan, 2000) such as a stable home life, child-focused parents, middle-to-higher income family and functioning support systems, high functioning siblings, yet still be failing in the education system. Goddard's (1996) work with retained reflexes seemed to offer an explanation as to why some children continue to face learning and behavioural challenges. She tested many children who were struggling at school, and found that retained reflexes were a common theme.

As part of the author's Kinesiology practice, parents of new clients were asked about the child's birth and any stress they were aware of before or after birth as part of the history gathering protocol. While the reasons for coming to see a Kinesiologist were varied, common themes emerged from both adults and children, about the time close to their birth. There were stories of intervention or trauma during the birthing process or trauma before or after birth, with examples such as the death of a family member, moving house, or physical accident. A link was noticed; these people who had aspects of their lives that were not working the way they wanted them to (thus they sought Kinesiology), would often describe difficulties around the time of their birth. This information encouraged work with reflex retention using a Kinesiology approach.

With the delivery by forceps of the author's own son in 2000, an interest was sparked in his developmental path. The signs of retained reflexes were recognised, for example, unusual arm movements, slow to crawl, hypersensitivity and social issues at school. The child participated in sensory rich programmes and activities, and while many developmental aspects progressed normally there were still some gaps. Having sold the GymbaROO centre in 2003 there was time for a greater focus on kinesiology and music. At another GymbaROO conference the work of Andy Dalziell came to light. He uses Dobie's

Bilateral Integration work (Dobie, Brown, & Dalziell, 2002) and the author has used some of these activities since meeting him. In 2013 the author discovered Blomberg and Dempsey's book *Movements that Heal* (2011). The case histories and the simple process resonated to such an extent that the author spent time experiencing the exercises on a personal level and encouraging her child to experience them. As a family some very positive outcomes have been noticed such as increased academic results, increased confidence and greater social skills. Completing the training for Rhythmic Movement Training has enabled the author to use the techniques within her Kinesiology practice. From the experience gained through the use of the movements, a desire to find out more about the experiences of other families developed, and thus the research questions grew and developed. The reading and research done as part of this Master's study has enabled increased understanding of the reflex processes and resolved a desire to find simple effective remedies in this area of retained primitive reflexes.

1.2. Reflexes defined

Primitive reflexes (also known as primary reflexes or infant reflexes) develop before birth, are activated through the birthing process and are critical during the child's early life. They are involuntary reactions that originate in the brainstem and are considered a fundamental part of the development process (Capute, 1982; Desorbay, 2013; Goddard, 1996; Sassé, 2009). Examples include the Moro reflex that lets the caregiver know the baby is frightened and the Spinal Galant reflex that empties the immature bladder of a new baby. As the child matures, the reflexes are integrated (disappear) allowing movement and intellectual processes to be controlled by cognition rather than reflex.

For some children the integration process is interrupted and the reflexes do not fully integrate. Maternal, birth and environmental stress have been implicated as the interrupters of reflex integration (Blomberg & Dempsey, 2011; Goddard-Blythe, 2000; Holley, 2010; Hsieh et al., 2011). A retained Moro reflex can cause balance problems and a retained Spinal Galant reflex can see a child still bedwetting beyond five years of age (Berne, 2006). McPhillips (2013) found that that there may be a link between poor educational skills and retained reflexes. The retained reflexes can be assessed though

measures such as the Schilder test as used by McPhillips and Callcott (Callcott, 2012; McPhillips, 2013) in their studies testing movement programs.

More than 70 primitive reflexes have been identified (McPhillips & Sheehy, 2004). However, the range of reflexes attracting higher levels of empirical, systematic research is limited to the reflexes described below.

The Asymmetric Tonic Neck Reflex (ATNR) has attracted significant research due to the implications for children in the classroom (Blythe, 2005; Goddard-Blythe, 2012; Jordan-Black, 2005; McPhillips, 2014; McPhillips & Jordan-Black, 2007a, 2007b; Piek, Dawson, Smith, & Gasson, 2008). This reflex develops in-utero and is activated by the turn of the baby's head. When the head turns, the limbs on the side the head turns towards extend and on the opposite side they flex. This is useful in aiding the baby's trip down the birth canal, and the birthing process strengthens the reflex as it is used. After birth the ATNR ensures that the airway remains open and it plays a part in the development of hand-eye co-ordination. When the reflex does not fully integrate children may have delayed crawling, poor balance, handwriting and visual perceptual skills (Desorbay, 2013).

The Moro or Startle Reflex has attracted less attention (Capute, 1982; Konicarova & Bob, 2012) but for parents it is probably the most well-known. It develops in-utero and is the baby's initial fight or flight reaction informing parents of the infant's distress (Goddard-Blythe, 2008). It helps the full term baby take its first breath and activates the body's defence mechanisms such as the sympathetic nervous system, adrenals and the release of stress hormones; adrenalin and cortisol. This reflex is normally fully integrated by approximately 4 months of age and non-integration is usually associated with hypersensitivity in the visual, auditory, vestibular and tactile areas (Blomberg & Dempsey, 2011). This reflex has been studied in relation to psychopathology, namely ADHD (Konicarova & Bob, 2012).

Konicarova and Bob also included the **Spinal Galant** in their study. This reflex develops in-utero, aids in the development of the vestibular system and helps the baby move down the birth canal through hip movements the reflex activates. With integration taking place between 3 and 9 months of age, the non-integrated child displays restlessness,

hyperactivity and distractibility in their primary school years and beyond. This reflex can also contribute to bedwetting in older children (Goddard, 1996).

The Tonic Neck Labyrinthine Reflex (TLR) and Symmetric Tonic Neck Reflex (STNR) have attracted few studies but are well documented (Blomberg & Dempsey, 2011; Goddard-Blythe, 2012; Goddard, 1996). There are two parts to the TLR: forwards and backwards. The TLR forwards develops at 12 weeks' gestation and is usually integrated at 3 – 4 months after birth. The TLR backwards develops at the time of delivery and is integrated by approximately 9 months of age. These reflexes activate when the child bends forwards and backwards and it is thought that they help with muscle tone, balance and proprioception (the sense of how our bodies are positioned). A retained TLR is displayed through weak muscles and poor muscle tone, hunched posture, balance issues, spatial awareness and sequencing challenges (Blomberg & Dempsey, 2011; Goddard, 1996). The STNR is a transitional reflex and develops at approximately 6 months of age and integrates at approximately 10 months. This reflex aids infants when beginning to crawl by enabling them to balance on all fours. The baby rocking on all fours is working to integrate the reflex which will then allow them to move forward and to crawl (Blomberg & Dempsey, 2011; Goddard, 1996).

1.3. Introduction summary

This chapter has introduced the need to investigate further the retention of retained reflexes. The author has positioned herself within the research and described her experience. Primitive reflexes that have attracted research have been defined followed by a brief description of their function. The literature review below explores the implications of a child having retained primitive reflexes with support from the studies completed in this area.

Chapter 2. What is known about reflexes? Literature review

This review of relevant literature covers three areas;

Retained primitive reflexes and their influence on future learning – offering an explanation as to why a study of a programme addressing retained primitive reflexes is relevant.

Programmes to address the retention of primitive reflexes - what programmes have been studied and which are currently being used.

Thirdly, studies that focus on the relevance of **parent experiences** in programmes that endeavour to support children facing developmental challenges – supporting the gathering of information from parents about the programme in question.

2.1. Methods of the review

This review has taken place over 10 months with multiple searches of databases, additional information has surfaced even though the same keywords were used to conduct searches. Three different methods were used to identify relevant studies and articles for this review. Firstly, searches for relevant literature were undertaken using university-based electronic data sources such as PsycInfo (Psychological Literature), ERIC (Educational Resource Information Centre) and CINAHL (Cumulative Index to Nursing and Allied Health Literature). Each search interrogated multiple databases by selecting the subject areas; Education, Health Sciences and Psychology. Throughout these searches, the keywords *primitive reflexes*, primary reflexes*, infant reflexes** were used (the asterisk ensures that a search contains the word, but is not limited to that particular word or part of the word), with additional words *ATNR, retained reflexes and Moro reflex*. All searches required that the study/research be published post-2000, that it had been peer reviewed (thus increasing the likelihood of reliability), and that the full text was available within the database. Secondly, the references on the collected studies were examined and potential further studies identified. Thirdly, the bibliographies of books that have been written

about this topic were read and references were followed up where possible. There was a significant amount of material written in this area in the 1970's, however it was important to ensure that the most current information was kept in focus.

The studies and articles selected predominantly commented on educational outcomes related to the retention of primitive reflexes (Brown, 2010; Callcott, 2012; Goddard-Blythe, 2012; McPhillips & Jordan-Black, 2007a; Reynolds, Nicolson, & Hambly, 2003). The children being studied were all primary school-aged, where school-based testing had identified learning difficulties. No useful studies were found on adults or adolescents in relation to retained reflexes and interventions although a study on the reappearance of primitive reflexes in nursing home residents provoked some interest (Hobo et al., 2014). The researchers were able to demonstrate a higher presence of primitive reflexes in patients who were having eating difficulties. The reflexes focused on were the snout reflex, the phasic bite reflex and the sucking reflex; reflexes not commonly referred to in relation to children and learning. There may be some interesting research opportunities in this area, with a possibility of improved adult functioning. Studies that focused only on the infant and environmental factors influencing primitive reflexes were not included (for example, a study of the effect of maternal tobacco smoke exposure and the neonate's primitive reflexes showed an effect but was not conclusive (Hsieh et al., 2011)). It could be argued that these studies add another dimension to the multi-faceted picture created when discussing retained primitive reflexes, however this literature review has been limited to behavioural and educational-based outcomes for primary school children.

2.2. Retained primitive reflexes

There is a growing body of literature investigating the phenomena of retained infant reflexes and the effect they have on the later development of the child, particularly educational and behavioural outcomes (Blythe, 2005; Callcott, 2012; Konicarova & Bob, 2012; McPhillips, 2013; McPhillips & Sheehy, 2004; Taylor, Houghton, & Chapman, 2004).

Key researchers in the area of retained primitive reflexes since 2000 have been Goddard-Blythe, McPhillips, and Jordan-Black. Studies in Ireland (McPhillips & Jordan-Black, 2007a, 2007b; McPhillips & Sheehy, 2004) have found significant links between poor

learning outcomes and the retention of the Asymmetric Tonic Neck Reflex (ATNR) in Irish primary schools. Another European study (Konicarova & Bob, 2012) found that children with ADHD (diagnosed in accordance with the DSM-IV criteria (American Psychiatric Association, 1994)) showed high levels of retained Moro and Spinal Galant reflexes. These studies show that retained primitive reflexes are present in some children with educational and behavioural challenges and that addressing these issues can improve their educational outcomes.

2.2.1. Motor development, cognitive development and retained reflexes

Motor development and cognitive development in children have been linked by several authors (Blythe, 2005; Callcott, 2012; Desorbay, 2013; Goddard, 1996; Holley, 2010; McPhillips, 2003; Sassé, 2009; Sibley & Etnier, 2003; Taylor et al., 2004; Tomporowski, Davis, Miller, & Naglieri, 2008), with Diamond suggesting that they are fundamentally interrelated (2000, 2007). In her 2007 paper she discussed human development being not only related to our genes, but the product of physical, social and cultural environments and their interaction with our genes. She suggests that a broad approach to intervention needs to include all aspects of development, with further research needed in placing equal importance on the different aspects of development, including movement-based activities.

Goddard's book, *A Teacher's Window into the Child's Mind (1996),* was an early text about retained reflexes using a neuro-developmental approach to learning challenges. She linked motor development, cognitive development and retained reflexes, and described each reflex in detail, with associated indications. The classroom teacher is provided with a series of tests that can be performed and suggested changes they can make to aid the learning of children identified with retained reflexes, as well as suggesting a reflex integration programme. She and Peter Blythe developed the Institute of Neuro-Physiological Psychology in the UK in 1975, and they offer training courses for people wanting to learn the exercises relating to reflex inhibition that they have developed (Goddard, 1996). In the following section of this review, studies relating to the efficacy of these exercises are discussed, however, the purpose of Goddard's book and the books discussed below are to give some research-based and anecdotal information about a series of exercises that have been developed, and thus encourage the reader to undertake further

study or training provided by the author, or the author's organisation. In another of Goddard's books, *What Babies and Children Really Need* (2008) parents are given suggestions as to activities and exercises they can complete with their babies that will, in her opinion, encourage the integration of primitive reflexes.

McPhillips and Sheehy (2004) completed a study that assessed the prevalence of persistent primary reflexes and motor problems in children with reading difficulties. Four hundred and nine, nine and ten year olds in Ireland, were assessed for reading levels and then 10% of the top, middle and bottom readers (41 children in each group) were assessed further for ATNR persistence and the prevalence of motor difficulties. Verbal IQ, sex of the child, free meal entitlement (level of social disadvantage) and month of birth were also assessed. They found that verbal IQ was the strongest predictor of reading level, and that social disadvantage was related to reading levels. They showed that the ATNR was persistent in higher levels for children with low reading scores, low verbal IQ and high social disadvantage although the association with motor delays and reading delays was not as strong as the prevalence of the ATNR. There was a higher number of boys with a retained ATNR but this did not quite reach levels of statistical significance. They found that 30% of the bottom 10% of readers had a diagnosis of dyslexia, meaning that not all reading issues are dyslexia-based. ATNR retention was high for children with dyslexia, but the authors stressed that using the ATNR as a determinant of dyslexia was unwise. They also acknowledged that only one reflex had been assessed in the study. This is a limitation as it appears that reflexes are an interrelated process and the integration of one may lead to the integration of another (Goddard, 1996).

2.2.2. Behavioural issues and children with retained infant reflexes

In the 1850's, Hughlings Jackson proposed that an evolutionary process involving the central nervous system was pivotal in human development, particularly higher mental functioning. Early movement and sensory processes enable the individual to integrate lower brain functioning with higher functioning. He used the term 'dissolution' to describe the process whereby a higher level process in the brain takes over a lower level process. He identified that disruption of the integration process resulted in lost continuity and the reflexes continued to have greater control of the consciousness and the individual

functions associated with development (Konicarova & Bob, 2013). Konicarova and Bob also cite studies from the 1930's to the 1980's where 'perisitent' primitive reflexes were linked to a range of psychiatric symptons from 'daydreaming' to schizophrenia, bi-polar disorders, parkinson's disease and dementia. However, of interest for this review is the link with ADHD and retained reflexes (Konicarova & Bob, 2012) and their impact on the educational outcomes for children. Komicarova and Bob completed assessments on 40 European children, (20 identified as having ADHD and 20 healthy children) for 2 primitive reflexes; Moro and Spinal Galant. They found that the ADHD participants had higher rates of retained reflexes than the healthy children and that there was no significant difference between boys and girls. They suggested that unfinished development through retained reflexes may play a significant role in ADHD. This study had a small number of participants and only two reflexes were tested, but the results indicated that further investigation may be warranted.

In an Australian study, a group of indigenous children were assessed for the presence of the ATNR (Callcott, 2012). The children came from an area where there were multiple risk factors, such as low socio-economic status (SES) and low parental education. The retention of the ATNR was measured against their motor skills and qualitative data via interview was gathered on each child's readiness for school. In this study 67.5% of the 40 children studied were evaluated to have moderate to high levels of retained ATNR. Their motor skills, particularly manual dexterity, showed delays indicating that their ability to explore their environment and develop skills for the classroom, e.g. scissor and pencil use, were limited. Teacher interviews described ADHD, ADD-type behaviours predominantly in the children with identified ATNR. The author acknowledged that the sample size was small and only one reflex was identified, however, these children from disadvantaged backgrounds with multiple risk factors showed significant levels of retained ATNR.

In another Australian study, Taylor, Houghton and Chapman (2004) assessed 109 mixed SES boys aged 7-10 years of age for four primitive reflexes; Moro, TLR, ATNR and STNR. Fifty four of the boys were diagnosed with ADHD, 34 had learning and social challenges and/or ADHD behavioural symptoms and 21 had no symptoms of ADHD. All children completed a series of tests in a university setting and a multivariate analysis of variance

(MANOVA) was conducted which showed adequate conformity. The results showed a correlation between levels of ADHD symptoms and levels of retained reflexes. Interestingly, they found that retention levels of the Moro reflex did not relate to ADHD symptoms or achievement outcomes, rather it was related to levels of TLR, ATNR and STNR, supporting the idea that the Moro reflex must integrate in order to allow subsequent reflexes to complete their process (Taylor et al., 2004).

2.3. Programmes to address retained primitive reflexes

A solution Goddard-Blythe and others found to encourage the integration of retained primitive reflexes were movement programmes (Brown, 2010; Dobie et al., 2002; Goddard, 1996; Jordan-Black, 2005). While movement programmes appear to have some positive effect on the reflexes, the commitment from the family, both in time and financial resources, can be significant. When the programmes are used in school, they are generalised so that all children do the same exercises. Several studies have used the programmes this way (Brown, 2010; McPhillips & Sheehy, 2004), however not all children retain their primitive reflexes and the reflex or set of reflexes retained differs from child to child (Blomberg & Dempsey, 2011). These factors have possibly confused the results and diluted the positive outcomes.

Sasse from Toddler Kindy GymbaROO has written several books with multiple references to the difficulties children face when their primitive reflexes are retained. In her most recent book *Smart Start* (2009), she focuses parents on exercises that are designed to integrate the reflexes. To date it appears that no studies have been completed relating to the pre-school exercises that she suggests, although some of the exercises are drawn from Goddard's work which has attracted some research (Blythe, 2005). However a study completed by Williams (2015) using a neurodevelopmental movement programme (Unlocking Potential (UP)) assessed the academic performance of 150 Australian five to eight year olds. While UP is not solely based on reflex integration, this element is contained within the programme. The results of the year-long study showed statistically significant increases in areas such as reading, writing, spelling and maths. Teachers commented on literacy and numeracy improvements, but also noted positive changes in

behaviour, social skills, hand writing, and general happiness of the children. One key difference in this (Williams, 2015) study compared with other physical movement/executive functioning studies (Hillman, Erickson, & Kramer, 2008; van der Niet et al., 2016) is that the exercises in the Williams study were completed daily. As Hillman notes (2008) duration and timing of the activity appears to be a significant factor in the success of exercise programme on cognitive skills. While Williams acknowledges her personal involvement in the programme, she has invited researchers to complete independent research to expand knowledge about the efficacy of the UP programme. There are a range of studies that support the positive link between physical activity and cognitive skills (Alesi, Bianco, Luppina, Palma, & Pepi, 2016; Esteban-Cornejo et al., 2014; Haapala, 2013; Mullender-Wijnsma et al., 2016; Sibley & Etnier, 2003) and this supports the current study. However, these studies do not focus on retained reflexes or basing the exercises on neurodevelopmental movement.

Samuel Berne's essay on Primitive Reflexes (2006) again gives detailed explanations about the reflexes, and recommends an exercise programme called *An Infant Motor Guidance Programme*. His essay contains no references to the programme's sources or its efficacy. *Movements that Heal* (Blomberg & Dempsey, 2011) describes exercises that were developed with the integration of primitive reflexes as the focus. Blomberg and Dempsey cite extensive case studies, however, there are no known empirical studies of the efficacy of RMT. The associated Rhythmic Movement Training (RMT) organisation provides training in the exercise programme.

2.3.1. INPP and Primary Movement Programme

Two programmes used with retained primitive reflexes that have attracted empirical research are the Primary Movement Programme (McPhillips, 2014) and the Institute for Neuro-Physiological Psychology (INPP) programme (Goddard, 1996). Both programmes are based on the movements designed to aid the body's ability to integrate the reflex movements used during and after the birth. Several studies have been completed (Brown, 2010; Callcott, 2012; Goddard-Blythe, 2012; Jordan-Black, 2005; McPhillips & Jordan-Black, 2007b; Taylor et al., 2004), and there is evidence to suggest that these exercise-based programmes had an effect on the learning issue targeted in the study. While these

programmes can be used individually, the studies were all classroom-based and the children had not been individually assessed as to which primitive reflexes they had retained, if any. While Blythe (2005) commented that 48% of all children had some level of retained reflexes, children will not benefit from an exercise programme designed to remedy a problem they do not have. The studies to date have not identified children with specific retained reflexes to complete the exercises, and then compare these children to other children with a similar reflex profile who have not completed the exercises. This could be an area for further research.

The Primary Movement programme has had several studies completed that attest to its efficacy and while there is no book, there is information on their website about retained reflexes and training opportunities for trained teachers (McPhillips, 2014). There is further discussion relating to the studies of this charity-based programme below.

A study completed by Reynolds, Nicholson and Hambly (2003) claiming that movement programmes made a significant difference to reading ability has come under close scrutiny from several researchers and teachers in the area of movement. The study comprised 35 children from Warwickshire, UK, all identified as having dyslexia with confirmation being provided through a Dyslexia Screening Test (DST). The children were divided into two groups and their school programme was unchanged. One group completed additional prescribed exercises at home and the other group maintaining their normal range of activities. The reading scores, using National Foundation for Education Research (NFER) tests of reading and national standardised attainment (STATS) tests were reported for both groups.

The design of the study was identified by several critics as problematic, in that it lacked a control group. The authors' justification was that it was logistically difficult and that asking a set of parents to invest in an activity that had no benefit was considered unethical. This was refuted by McPhillips (2003) and Singleton and Stuart (2003) as creating research that did not fit with normal scientific procedures, and they expressed concern that the results were used to persuade parents to engage in the expensive programme used in the research. Bishop (2008) also criticised the design of the study and evaluation methods. She, too, was concerned that the statistics, including a 300%

improvement in reading progress, would be used in marketing of the programme to parents. McPhillips also commented on this fact, claiming that improvements, or lack of them, could in fact be attributed to teaching styles or method. Reynolds et al. (2003)claimed that in the year before the study, the children, who were at chronological reading age, made 6 months' progress in reading, and the next year they made 19 months' progress while completing the exercise programme. McPhillips (2003) argues that children should make 12 months' progress in reading in 12 months if the teaching and the programme are appropriate. The fact that the children in the study made 25 months' progress in two years is an acceptable achievement. He claims that teaching methods, not the programme, could be the reason for the improved reading scores. Other critics noted that the groups were not evenly matched for reading skills at the beginning of the trial. The children were selected on the basis of their dyslexia, but the results highlighted their reading changes (Richards et al., 2003). Richards et al. also questioned the validity and the efficacy of the intervention based on the flaws in the design.

In 2007, Reynolds and Nicholson produced a follow-up paper to answer the critics. They acknowledged that the groups were matched for levels of dyslexia, not reading ability and as it transpired the non-exercise group had higher reading levels than the exercise group at the beginning of the study. In the follow-up study they offered the exercise programme to the group that did not complete it in the initial study, therefore forming a delayed treatment design, testing all children at 6, 12 and 24 months on the NFER and STATS tests as well as the DST. The results showed lasting improvements in some areas, such as reading accuracy, phonological skills and verbal working memory. However, there was no improvement in speeded reading, speeded spelling and nonsense passage reading. They concluded that the exercise programme led to benefits for children with learning challenges, but they could not explain why this happened, having ruled out the possibility of a Hawthorne effect (Reynolds & Nicolson, 2007). No critical comment on this follow-up study was found during this literature review, however, the study remains a small one, the design problems remain and the profit-based Dore organisation stands to benefit from any favourable outcomes. The Dore programme experienced 'business difficulties' in 2008 but they appear to have remedied the issues, re-branding themselves as a 'community interest company' (Dynevor CIC, 2014).

There are studies of retained reflexes and movement programmes that have attracted less controversy. Brown (2010) studied the effect of the Primary Movement Programme using a repeated measures design that focused on the fine motor skills of 65 children aged four – five years. The children came from low SES schools and the assumption was made that children from such schools have higher rates of retained reflexes (McPhillips & Jordan-Black, 2007b; McPhillips & Sheehy, 2004). The five-month study had all children in the selected class completing either the Primary Movement exercises or another set of exercises, daily. The author acknowledged that the study was on a small scale and for a short duration, but the results indicated that the Primary Movement Programme had a significant effect on improving the children's fine motor skills. However, studies (Jordan-Black, 2005; McPhillips & Jordan-Black, 2007b) have shown that there is little to no effect on skill development when children with integrated reflexes complete the exercises. The rates of retained reflexes have been shown to lie around 48% of all children (Blythe, 2005) with 62% of the bottom 10% of readers showing high levels of retained reflexes (McPhillips & Jordan-Black, 2007b). With this information Brown's (2010) effect size could have been larger had she tested for retained reflexes and excluded children with no evidence of retained reflexes from the results. It is apparent that she was attempting to gather data from consistent completion of the exercises by having the programme completed in schools, and ethically she may have struggled to convince parents that their children would be completing exercises that were of no benefit. Herein lies the researcher's dilemma in gathering meaningful data in this area. If the exercises are completed at home with the parent, there is a high risk of them not being completed accurately and consistently, and yet the school curriculum is overloaded and completing activities that do not directly benefit children can be seen as wasting valuable time. Reynolds et al. (2003) attempted to address this by having participants complete the exercise programme at home, but as already mentioned, their study design was criticised for a lack of scientific procedures, thus casting doubt over the results.

Goddard-Blythe (2005) summarised the findings of several studies involving 810 children aged four - five years that used the INPP exercise programme. She is a director of this programme, although the studies she discussed were completed by independent researchers in the United Kingdom. Because the studies were independently completed

there were some problems matching results, but her overall finding was that the INPP exercise programme reduced the neurological dysfunction in children identified as 'under achieving'.

In summary it would appear that for some children there is a correlation between having retained reflexes and having learning challenges and that for those children an exercise programme targeted at integrating the reflexes can be beneficial. Why this happens is something that needs further investigation. Studies of the range of skills improved through reflex integration focus on reading and cognitive tasks, however there are anecdotal reports of a wider range of skill improvements that warrant further investigation (Blomberg & Dempsey, 2011).

2.3.2. RMT

Rhythmic Movement Training (RMT) is an individualised programme for children and adults who present with a variety of learning and social issues. Many of these issues can be shown to have a retained primitive reflex component. Each session of RMT involves the identification of a retained reflex and the selection of an exercise from one of the options available in the programme. A range of physical tests are used to assess the common reflexes (Goddard, 1996). Children are given one or two individualised exercises to complete each day at home. The time required to complete the exercises at home is approximately five – ten minutes each day (Blomberg & Dempsey, 2011). RMT, as described by Blomberg (2011), appears to be easy for children to use and manageable for most families within their busy routines. The exercises are based on the normal movements infants make as they play on the floor with a focus on completing the exercise rhythmically. The rocking and moving of limbs a baby does naturally appears to be an integral part of the normal development of their brain and body (Berne, 2006). With studies linking the positive effects of music (Harris, 2008; Lense & Dykens, 2013; Mathur, Duda, & Kamat, 2008), the rhythmic element of this programme sets it apart from other programmes. While there is a body of anecdotal support, there appear to be no methodical studies of RMT to-date.

2.4.Parental experiences

Parental involvement is critical to their children's development and the programmes or activities children with challenges participate in (Koh, Shin, & Yeo, 2010; Paige-Smith & Rix, 2006; Williams, 2005). Several studies have focused on the experience of parents in intervention programmes, as parental perceptions are essential for these programme to succeed. As part of a study assessing the effectiveness of The Learning Programme for the Development of Autistic Children (LPDAC) (Koh et al., 2010), the authors conducted a study of the perceptions of the parents using the programme. These parents had made a decision to have their children take part in the programme and the authors wanted to establish why parents chose this programme above others and what perceived benefits they and their children had gained. Koh et al. (2010) believe that parents are the best source of information about their children and the programmes they participate in. Many parents talked about the research they had done before they settled on LPDAC, and a significant number of families had already tried other interventions before starting LPDAC. This, along with the number of respondents (206 out of a possible 245) gave the researchers confidence that these parents had found the programme to be of benefit for their children (Koh et al., 2010). The parents gave the researchers valuable information about the programme which they propose to match with the longitudinal study they are in the process of completing on the efficacy of LPDAC. Another study by Paige-Smith and Rix (2006), used parents' perceptions of early intervention programmes their children (who had Down's Syndrome) participated in, as an aid in the development of government policy in the UK. Parent satisfaction is considered an essential component in the implementation of the programme and through the insights gained from parents, policy and practices around the delivery of the programme, particularly in relation to support given to parents, were addressed. In both studies, parents provided useful information in relation to the two programmes being studied and they have synergies with this current research.

An Australian study conducted by Williams (2005) focused on a group of mothers whose children were not given a learning delay diagnosis until the child was at school. Through her qualitative study, Williams interviewed 8 mothers and found that they were all aware

that during the pre-school years something was not the way it should be with the child's development. The medical professionals they sought advice from did not act on the concerns expressed. Several reasons were proposed for this lack of action; training, a belief by health professionals that minor delays can be managed in the home, interactions between medical professionals and mothers, societal myths about mothers and children and the value placed on the mother's perceptions. Arguments about the need for an early diagnosis influenced how the mothers' pursued further intervention and, without a medical diagnosis some programmes were difficult for the parents to access. Williams' study has synergies with the first two themes in this current study; Parents became aware of the challenges their child was experiencing, but found difficulty accessing help they believed they needed.

The issue of inability to access early interventions was also highlighted in an American study (Hendrickson, Baldwin, & Allred, 2000). 16 mothers were asked to describe the factors that contributed to the prevention of early intervention for a child they believed needed additional support. As with the Williams' study, these parents articulated the lack of understanding of child development issues from primary care-givers and a resulting lack of referral to the appropriate service.

2.5. Limitations of the studies selected

In summary, the literature reviewed highlighted several limitations. All the studies relating directly to reflexes are relatively small and of short duration. One meta-analysis was found, but again the studies were all small and of differing designs, making it difficult to compare data.

While several reflexes have attracted research attention, namely the ATNR, Moro, Spinal Galant, TLR and STNR, 70 reflexes have been identified and no studies were available on any of the others in relation to learning. Within the human body there are strong relationships with certain factors and processes determined by other factors and processes, and isolating reflexes could be problematic unless the full picture is considered. However, it is important to select a starting point when working with new information which is where most of this reflex research lies.

Researchers completing research where they stand to make financial gain is problematic and there was a significant amount found among this literature. Goddard (1996), Reynolds (2003) and, to an extent, McPhillips (2014), have businesses that use research they have completed to convince parents and teachers that their system and training have significant effects on children's ability to learn. It is important that this area attracts independent researchers.

Study designs have been shown to provide challenges. Asking parents to be part of a control group that performs exercises that may be of no benefit is problematic when parents are already time-poor. Having parents perform exercises at home reduces the likelihood that they willl be performed regularly and correctly, while asking teachers to complete the exercises improves reliability but means that all children in the class, regardless of need, must perform the exercises. Accurate, ethical data gathering in this area seems to be a challenge.

The studies relating to the expereinces of parents when using interventions that had some relevance to this project were limited. However, the two studies highlighted, (Koh et al., 2010; Paige-Smith & Rix, 2006), did provide some insight into the benefits of talking to the parent working with the child. Williams' study (2005) did not look at interventions, but did focus on the reasons why parents find it challenging to access help the believed they needed.

Finally, the Reynolds et al. (2003) study limitations caused lively debate and critical writing which may be viewed negatively, but they also put reflexes in the spotlight and often out of such disussions come new ideas and a stronger resolve.

2.6.Ideas for further reflex integration study

Larger, longitudinal studies would help in the area of reflex based exercise programme efficacy. Sweden gathers extensive health, education, and social economic status data (through the personal identification number system) on all its citizens and this could be used to identify large groups of children that could be tested for reflex retention. This may indicate the scale of the problem. Testing adults, particularly those with learning

challenges, and having them complete reflex integration exercises would be interesting. While there is anecdotal reports of changes in adult functioning after completing the exercises, it would be useful to analyse data in this area (Blomberg & Dempsey, 2011).

Testing a wider range of reflexes would be of benefit to children. As an example the Fear Paralysis Reflex (FPR) that develops before the Moro is not mentioned in any studies, although the development of the Moro has been reported to be dependent on the integration of the FPR (Blomberg & Dempsey, 2011; Goddard, 1996). The inter-relatedness of all the reflexes also needs further investigation.

2.7. Literature review summary

Retained primitive reflexes are possibly an underlying cause of 'difficult to remedy' learning challenges in children and maybe even adults. The studies highlighted in this review point to a higher level of retained reflexes in children with reading challenges, and in children either diagnosed with ADHD or displaying ADHD behaviours. Exercise programmes have been shown to improve skill acquisition for a limited range of skills, namely reading and fine motor, although this is an area that requires further research.

If it is possible to find the key to unlocking the potential of more of our children, our ability to improve the lives of vulnerable members of our community would increase.

Chapter 3. Methodology

3.1. Introduction

This chapter focuses on the methodology that underpins this research along with the methods and tools used. The methodology is the umbrella of logic and theoretical perspective that is placed over the research project and its design (Bogdan & Biklen, 2007). An explanation about the need for a researcher to be aware of their view of the world and the influence this view has on the research is discussed first. Theoretical influences that have been part of the research design decisions, namely interpretivism and qualitative methodology are explained along with the phenomenological research approach used in this study.

Secondly, the methods and tools used in the research project are described. According to Bogdan and Biklen (2007), robust research uses methods and tools that are consistent with the logic associated with the methodology. Ethical considerations are discussed as well as the need to maintain trustworthiness and rigour. Crystallisation (Richardson & Adams St Pierre, 2008) is described as the process used to aid the authenticity of this research.

3.2. How does the researcher view the world?

In qualitative research, the researcher aims to develop increased knowledge about a phenomenon through the research process, which may also involve moral and ethical decisions being made during the study. As already described, this author is an educator with a strong interest in pedagogy - defined for this study as the methods and practice of learning, teaching or generally being part of children's lives (van Manen, 1997).

When discussing any philosophical aspects at the beginning of a qualitative research project, the abstract ideas, beliefs and life experiences of the researcher influence their view of the world (Creswell, 2013; Denzin & Lincoln, 2011). The way researchers live their lives, their view of themselves and others, the ethical and political influences they are part of, shape their views. The term 'knowledge claim' is used by Creswell (2013, p. 20) to

describe the philosophical assumptions made by the researcher. He stresses the need to be aware of this during the design of a research project. Creswell highlights four philosophical assumptions; ontology (the nature and characteristics of reality), epistemology (knowledge gathered through people's subjective experiences), axiology (the researchers need to 'position themselves' (2013, p. 20) as part of the study) and methodology (the researcher collects and analyses data knowing that it is shaped by their own experiences). These considerations are vital in the discussion section of the project, particularly an interpretive paradigm where the researcher needs to be aware of their influence over the understandings gathered.

3.1. Theoretical framework – Interpretivism

This thesis explores the experiences of parents using an exercise programme (RMT), thus positioning itself within a qualitative, interpretive methodology. The umbrella in Figure 1 represents this aspect of the project. An interpretive paradigm allows the research to present explanatory and analytical offerings from subjective epistemology, namely human behaviours and experiences, which are viewed as valid forms of data (Creswell, 2013; Denzin & Lincoln, 2011).

Creswell describes interpretivism (also known as social constructivism and anti-positivist) (Cohen, Manion, & Morrison, 2008), as being part of an interpretive framework within qualitative research (Cohen et al., 2008; Denzin & Lincoln, 2011), a world view that can underpin research (2013). The view of interpretivism is that individual interpretations are not seen as 'truth', and it is from the multiple experiences and meanings of lives lived that the researcher is led to greater understanding of a phenomenon through the complex and varied views of the participants (Creswell, 2013). The data gathered shows participants' interactions with others as they construct their world, thus Creswell uses the term 'social constructivism'. This process enables the researcher to develop a pattern of meaning or theory. The interpretive framework fits the aims of this project, allowing the researcher to explore the lived experiences of the participants.

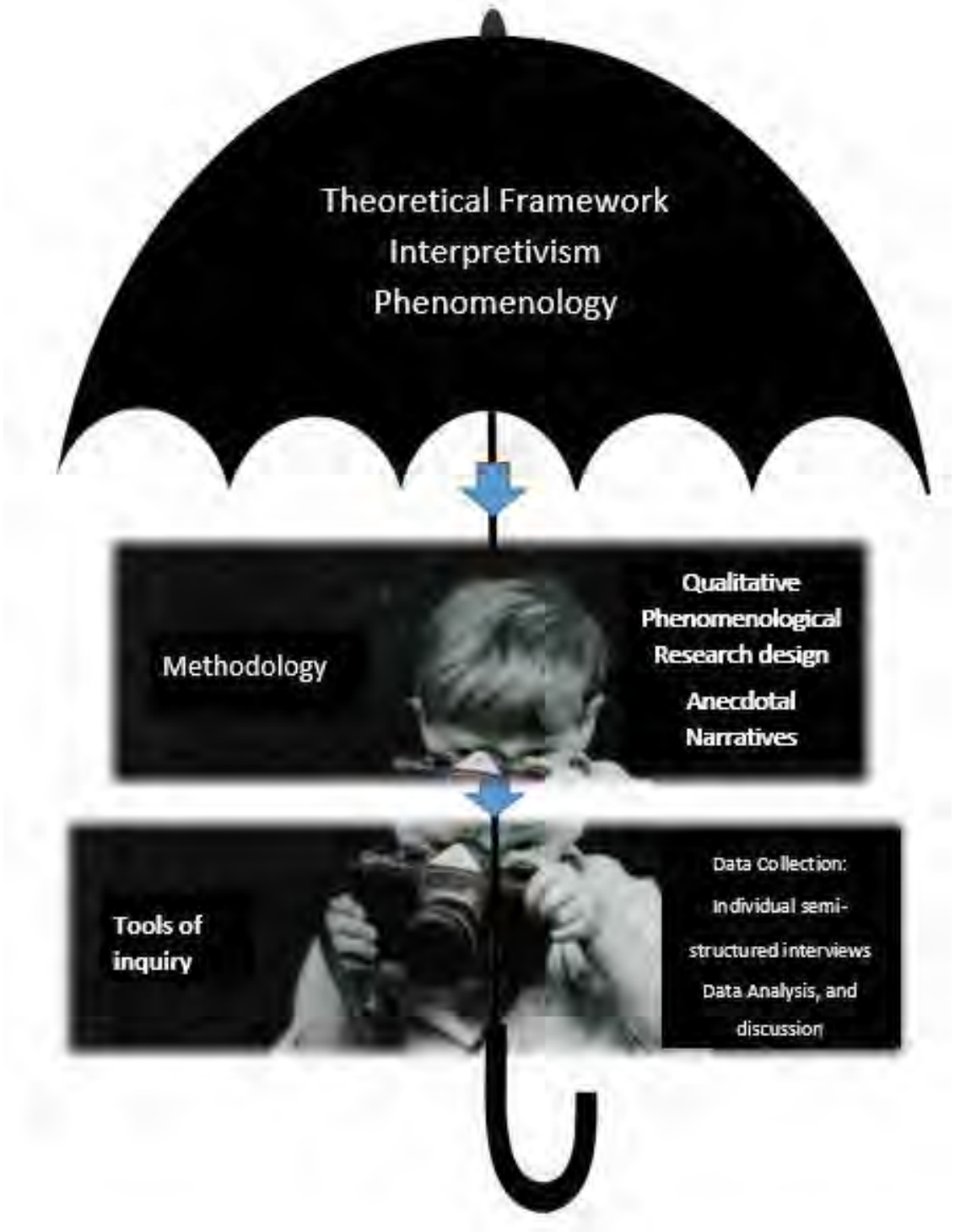


Figure 1 The methodological overview

There is a holistic approach to qualitative research, and the social context is an important consideration as it defines the research and makes the findings context-specific (Bogdan & Biklen, 2007; Yin, 2011). Bronfenbrenner's (2005) approach to child development used in Worcester, Nesman, Raffaele- Mendez and Keller's (2008) study on children with challenging behaviour is applicable to this study. This bio-ecological system theory, developed in the late 20th century by Bronfenbrenner and later Cicchetti, Toth, and Maughan (2000) engages a broad view of development. Human development is seen by Bronfenbrenner as "the set of processes through which properties of the person and the environment interact to produce constancy and change in the characteristics of the person over the life course" (1997, p. 191). Bronfenbrenner focused on the process, the person, the context that the person lives in and the time the life is lived. He developed nine propositions as part of his theory. Concepts such as; the range of experiences, proximal processes, a flow of process-person-context-time, increasingly complex relationships, developing secure attachments, widening the circle of relationships, child development influencing parental development, and the effect of time over generations are factors he considered to be influential in a person's development (1997). His theory takes into account multiple systems, which directly and indirectly influence development; namely; (1) microsystem (the child's immediate or close relationship environment), (2) mesosystem (the interaction between two microsystems that directly affect the child, such as home, school, peer group (Onwuegbuzie, Collins, & Frels, 2013), (3) exosystem (a system that is not in direct contact with the child, but can shape the child's development through circumstances created within any of the microsystems such as parent's place of employment (Bronfenbrenner, 2005) , (4) macrosystem (bigger systems within our society, culture and laws)and (5) chronosystem (the time span the development takes place in) (Cicchetti et al., 2000). This theory highlights the complexity of development and the need to address issues from a range of perspectives. It also focuses on prevention and links the multiple systems of care encountered by the child (Worcester, Nesman, Mendez, & Keller, 2008). The theory provides a system to look at how parents make decisions about their child; which systems are not working? Maybe it is the mesosystem and the parents have some control over that, or maybe it is the exosystem and macrosystems at fault, where the parent has less control. For RMT to be effective, parents and caregivers need to

support the child through the process. It is important to understand what led the families to deciding to use RMT and how families would manage the programme (Koh et al., 2010). Children with learning challenges are directed towards remedial work and the work they attempt often takes longer than children with fewer challenges (Mather & Urso, 2008). Paige-Smith and Rix (2006) emphasise the importance of the parent's perspective in interventions, and a qualitative process allows their experiences to be explored.

3.2. Research design

The aims of this project as stated in Chapter 1 are most effectively met through a qualitative research method. Qualitative research is most often conducted in a natural setting, meaning the research takes place in the participant's environment rather than a laboratory. Face-to-face interviews are preferred to surveys. It was expected that participants in this study would feel more comfortable being interviewed in a location of their choosing, with all interviewees opting for their interview to be conducted in the family home.

As an investigative methodology, a qualitative approach appears to sit well with the complexities of parental experiences of RMT (Snape & Spencer, 2003). Through the interview process a question is explored using descriptives and perceptions, rather than numbers and statistical analysis associated with quantitative research, thus fitting the aims of this study (Snape & Spencer, 2003). According to Snape and Spencer (2003), there is "no single, accepted way of doing qualitative research" (p. 1). The data is gathered in the environment of the participants, with observation as the focus, rather than experimentation. This process may take more time than quantitative studies, but being immersed in the aims of the research and discovering perspectives and meanings rather than making a quick observation is appropriate for this study (Bogdan & Biklen, 2007). Sample sizes in qualitative research are often limited in order to manage the volume of data gathered while still being able to explore the topic in-depth (Creswell, 2013). Between six and eight families, for example, were interviewed in the studies that have synergies with this study (Esdaile, 2009; Paige-Smith & Rix, 2006; Worcester et al., 2008) in which seven families were interviewed.

Qualitative research is carefully planned, but reality is considered "incomprehensible, fluid and shaped and influenced by social interaction" (Arghode, 2012, p. 159). The research question is formulated before the study commences, but is permitted to be changed as the research progresses and the data is gathered. This is an important aspect for this research as it is not clear exactly what will emerge. Creswell describes the process as developing themes, patterns and categories from the "bottom up" (2013, p. 45), and these can change through the data gathering process.

The researcher is a key element in the research and their reflections and observations are part of the data. Researchers spend time in the environment observing others and themselves, listening to what is being said, contributing observations and encouraging participants to explain themselves to a deeper level (Creswell, 2013). This is essential to understanding the situation in which the families being studied live and the process that they go through relating to RMT for retained primitive reflexes.

In many studies there is an element of 'insider research' within the project. The researcher may have had experience with the phenomenon although it is often this prior knowledge that forms the basis for the formulation of the research questions and the interest in a particular experience.

3.2.1. Phenomenological research

Within the qualitative approach to research there are a number of different traditions. Examples include; narrative research which involves the telling of a story, such as a life history; grounded theory research which focus on an individual story used to aid the development of a theory; ethnographic research which focuses on an entire group of people, maybe a cultural group or an entire school, and behaviours and patterns are described and interpreted; case study research which takes a 'case' (single case or multiple cases) and explores it within its normal setting; and phenomenological research, used in this study, which focuses on a specific phenomenon (Creswell, 2013).

3.3. Phenomenology as a methodology

Exploring methodologies alongside the aims of the study led the author to phenomenology. In figure 1, the child's head represents the cognition used to establish the methodological processes underpinning this project.

Phenomenological research was first used by the philosopher Husserl at the beginning of the 1900's (Cohen et al., 2008) as a methodology to question what was considered common-sense or the assumptions of everyday life. Through the investigation of experiences, namely perceptions and attitudes of their lives by the people involved, information is gathered. Meaning of a common experience or phenomenon for a group of individuals is what sets phenomenological studies apart from other forms of qualitative research. The phenomenon may be something that all humans can experience (Creswell, 2013) such as grief or anger, or it may be a particular experience such as undergoing heart surgery or as in this study, the experience of using RMT exercises. This approach is a philosophy that removes presuppositions until they are founded more firmly and the gathering of data from people who have experienced the phenomenon gives a greater level of understanding on which to base future research. The information gathered is analysed in relation to the phenomenon in question, with themes collated (Bogdan & Biklen, 2007).

The two phenomenological approaches investigated for this study were; hermeneutic phenomenology (van Manen, 1997), and psychological, empirical or transcendental phenomenology (Moustakas, 1994).

3.3.1. Hermeneutical phenomenology

The phenomenology described by van Manen (1997) is termed hermeneutical phenomenology; research based on lived experiences (phenomenology) and interpreting the texts (data) of life (hermeneutics). The phenomenon is still described but the researcher reflects on the themes that emerge from the data gathered and through an interpretive process attempts to add greater meaning to the lived experience. Moustaka (1994) describes transcendental phenomenology as having a focus on the descriptions of the experience of the participants, with minimal interpretation from the researcher. The concept of **epoche** as used by Husserl (Creswell, 2013) involves bracketing – the researcher

sets aside their own views and experiences to examine fully a fresh perspective provided by the experiences of the participants. While the researcher in this project attempted to bracket herself as in Moustaka's (1994) approach, after acknowledging the breadth and depth of experience with RMT, this was considered unrealistic. The information gathered from parents and the clustering of the themes that emerged provided rich descriptives, and an interpretive approach appeared to best fit the aims of this project. As interpretivism is part of the theoretical framework for this study, hermeneutical phenomenology fits comfortably within the methodology. The information from parents has been interpreted by the researcher using her previous experiences with RMT.

3.4. Methods and tools of the research

The methods and tools of the project are represented by the camera in Figure 1. The child is looking through a lens and it is the symbolic camera that has captured the experiences and enabled the focus to be sharpened on the RMT experiences of seven families. The researcher has used RMT herself as a participant and as a qualified practitioner. However, client families from other RMT practitioners were used for the study to enhance rigor and trustworthiness. Below are the methods that were used to carry out the research; from participant selection through to data analysis and ethical considerations.

3.4.1. Participant selection

Limiting the number of participants to between five and 25 is common in phenomenological studies (Creswell, 2013). In this study seven families who had used RMT with at least one of their children took part. To ensure greater validity of the information gathered, two adults in each family were interviewed individually about the programme. In all seven cases it was the mother and father who were interviewed.

Purposeful sampling (selecting participants within pre-determined parameters) was part of the selection process (Creswell, 2013). While it was hoped that a range of families would be considered when selecting participants for the study, it transpired that they were all middle to high income earners, two parent families. The self- funding nature of the programme is believed to have influenced the range of people able to use RMT.

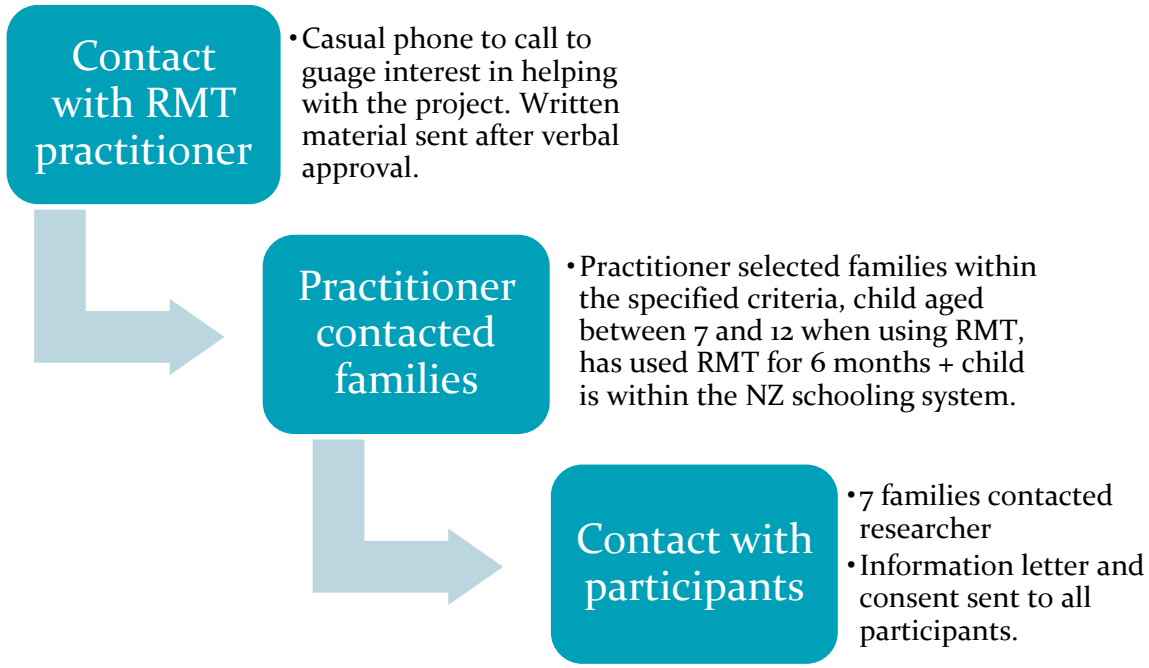


Figure 2 Participant selection process

For this study all the families had a child who used RMT between the ages of seven and 12 years (the age when formal standardised testing in New Zealand schools identifies levels of achievement). Limiting the age of the children had two purposes; firstly, parents may have had school reports that they could use to support the comments they make about their child's development, and the experiences of parents with children between 7 and 12 years of age would be useful for any further study investigating the efficacy of RMT with school-aged children. Also, previous studies of reflex integration programmes have studied children within this age range (Brown, 2010; Goddard-Blythe, 2012; McPhillips & Sheehy, 2004) and another study in this area would provide additional opportunities for analysis. Another aspect of previous reflex integration studies is their limited focus to one or two reflexes (Brown, 2010; McPhillips & Sheehy, 2004), however, for the purposes of this

research, participants were not limited to any particular retained reflex.

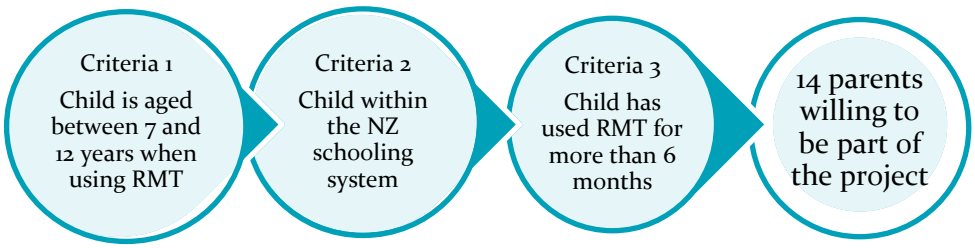


Figure 3 Purposeful sampling criteria

All of the families had been using the RMT exercises for six months or more so that parents had an extended length of time to comment on. In other studies, parent information was considered more useful after several months of participating in the programme being researched (Koh et al., 2010). Parents were interviewed in a setting of their choice, with all choosing their home. In qualitative research the research is done in the participants' normal environment as this may form part of the observation (Bogdan & Biklen, 2007). Four RMT practitioners in New Zealand were approached to provide clients who were willing to participate in the study. The questions asked by the researcher (see Appendix A) were about aspects of RMT that had already been completed by the children.

3.4.2. Ethical issues – Gaining consent

Respecting and honouring participants is essential in the research process and ethical issues could have arisen in this study, although none have surfaced to-date. Due to the small sample size and interviewing being the primary method of data collection, confidentiality, anonymity and security of the data are challenges in qualitative research, particularly in smaller communities such as New Zealand (Bogdan & Biklen, 2007; Snook, 2003). Within the interviewing process, very personal information was gathered and in the quoting of participants in the research findings care was taken to ensure identifiable information was not used. To maintain the anonymity of participants, their location and name of their RMT practitioner have been withheld, and pseudonyms have been used. Several participants chose their own pseudonyms (Snook, 2003).

Communicating clearly the voluntary nature of the study and the participants' freedom to leave the study at any time to both parents and practitioners was part of the informed consent process (Snook, 2003) (Letter of Information Appendix B and D). Parents were informed that they or their child had the right to withdraw from the project at any time, and could withdraw any information they had provided.

In all research, risk to participants needs to be considered. "The United Nations Convention for the Rights of the Child (UNCRC) (United Nations, 1989) offers children an ethical, moral and legal mandate for protection, provision and participation rights" (Mortari & Harcourt, 2012, p. 234). In research this is often referred to as the need to 'do no harm'. The term 'harm' needs to encompass physical, psychological (Snook, 2003) and spiritual aspects of the child and their community. To ensure this, parent's perspectives and observations were supported without judgement.

This study gained approval from the UC Educational Research Ethics Committee (ERHEC, 2009). All participants of the study were provided with detailed information about the aims, objectives and processes involved in the study prior to the commencement. (See Appendices B - G). Information letters were provided for RMT practitioners, parents and children. This information was provided in written form and included an offer of a verbal explanation if required by the participant. The letters also contained contact details for complaints procedures.

Written consent was obtained from the RMT practitioners and parents, and children where appropriate (Dockett, Einarsdóttir, & Perry, 2012; Harcourt & Conroy, 2005) (Consent Information Forms Appendix C, E and G). These forms described the process they would go through, the fact that the interview would be recorded for transcribing proposes only, that the data gathered would be stored securely for a minimum period of five years following the completion of the project and then destroyed, and the reporting and publication process of the study.

In New Zealand, honouring Treaty of Waitangi issues of partnership, participation and protection were underlying components during all interviews, data analysis and presentation of the findings. While reflex integration is not a problem specifically related

to Māori, it is possible that some Māori families may have used RMT. Protection includes respecting the information given by participants and if Māori families had been included, consultation on issues of importance to Māori would have been explored and acted on. No Māori families were in the participant group and reasons for this could be explored further.

3.4.3. Data gathering

One semi-formal interview with each parent was the main method of data collection: the story was able to start in one place and then wend its way somewhere else (Bogdan & Biklen, 2007). Qualitative data is often full of descriptives, and in the transcribing of interviews, every word, pause and gesture was recorded, along with the researcher's observations of the interviewee (Bogdan & Biklen, 2007). The semi-structured interview had a series of questions but the interviewer did not control the interview (Creswell, 2013). The questions were used as a guide, but as issues and perspectives of the individual parent emerged they were able to be explored (See Appendix A for sample key questions for this study). Several open questions were used, with probing open-form questions to gather a depth of data. Building rapport with the families was central to the quality of the interviews undertaken and the initial questions about the child were designed to aid this process. Of the 14 interviews, 10 were conducted face-to-face and four were completed using internet connections such as Skype or by phone. The researcher found that rapport with interviewees was easier to establish face-to face. This may be due the fact that this researcher is more experienced in face-to- face interview situations.

Reports from educational and health professionals involved with the child were presented by parents to support the comments they made. For example, one parents used school reports, while another had occupational therapy reports to support their description of their child and the issues they have experienced. Several parents provided work samples and drawings to support their observations.

Parents of each child were interviewed once. To aid the crystallisation process described below, two people, caring for the child on a day-to-day basis were interviewed independently. The interviews last between nine and 67 minutes. Interestingly, the

shortest interviews were via the internet/phone and with the fathers. As expected the interview with the primary caregiver took longer than the interview with the secondary caregiver although both parents were offered the same amount of time. Audio recordings of the interviews were made. Parents were informed that they could ask to have the recording stopped at any time and the recording could be destroyed if there was material that they do not want used in the research. This information was provided in the information letter to parents (Appendix D). All but two of the parents asked for a copy of the transcribed interview to be sent to them. All participants completed the interview process and remained in the study.

Following each interview, an analytical memo was written with perceptions and observations recorded as noticed by the researcher. The recorded interview was then transcribed, word for word by the researcher. Parents were able to read the transcriptions to ensure that an accurate record had been produced. The process of member checking transcribed data is part of the rigor and trustworthiness described below.

3.4.4. Rigour and trustworthiness

Time is seen as very important in the trustworthiness of a study according to Cox and Roos (2008). Guba and Lincoln focus on "prolonged engagement", "persistent observation" and "peer debriefing" (1989, p. 237). Time to build rapport with participants, time to discover the relevant elements and time to work through the process with peers. Member checks (parents were able to read the transcriptions) and asking participants and supervisors to read preliminary findings adds to the rigour of the study

There are four areas that relate to trustworthiness in qualitative research: credibility, transferability, dependability and confirmability (Guba & Lincoln, 1989).

Credibility is a term used in qualitative research to indicate that the results are credible or believable. This is done from the participant's perspective and only they can determine if the presented findings are actually credible. Allowing participants to read transcripts or discussion of the findings before the study is published adds weight to the credibility and reliability of the data and this was completed in this study.

Transferability describes the ability of findings to be generalised or transferred to another context (Guba & Lincoln, 1989). The detailed descriptions of the processes used and assumptions made in the reporting of this thesis aid this process. A detailed research diary has been maintained, field notes kept, both describing the research process in detail as was in Esdaile's (2009) study, and this increases the likelihood of transferability.

Dependability in qualitative research requires the researcher to document any changes in the environment and methodology. Provided that shifts are thoroughly documented, they are viewed as strengths in a maturing enquiry (Bogdan & Biklen, 2007). While the base structure remained throughout the study, what started being termed 'themes' clearly related to the paths taken by the parents, thus the metaphor of a path and the term 'steps' emerged. The data from the first step about the child's development contained richer descriptives than was expected and so an additional research question was added to the supplementary questions - What path led the family to RMT?

Confirmability is the final part of trustworthiness (Mutch, 2005). Is there a trail that can be followed to show that the findings are in fact those of the participants of the study, not just that of the researcher? Copies of the recorded material, detailed transcripts with their coding included, observer comments woven through the transcribing and a research diary have been completed and will aid any audit undertaken to assess the quality of the data. Dates, times, places, participants and contexts at the beginning of each set of field notes maintained order of the files. Interviews, being the main data collection method in this study, provided additional challenges. There was a possibility that participants may not be truthful, or that they may refuse to answer questions they considered too personal (Tolich & Davidson, 1999). In this study all participants willingly answered the questions. Issues of power relationships or the need of the participant to act in a way they perceived they should behave were not obvious when the data was being gathered. The challenge for the researcher was to build a positive relationship with the participants in a relatively short time so that rich, truthful descriptives were gathered (Tolich & Davidson, 1999). Being mindful of these challenges enables the gathering of reliable data.

3.4.5. *Crystallisation or triangulation*

Triangulation is a qualitative research method that aims to ensure validity of data gathered and minimise biases. This is essential to provide robust data and increases confidence in the data presented through the study (Creswell, 2013). Triangulation involves gathering information using differing methods and sources while it focuses on a triangle with fixed points that can be matched (Atkinson & Delamont, 2008). This study has not assessed the effectiveness of RMT and so gathering data from different sources would not triangulate the parent's experiences of the programme. It would triangulate the effectiveness of the programme, which has not been studied. However, Richardson and Adams St Pierre (2008) offers the imagery of a crystal with its infinite variety of shapes and angles, and the ability to grow and change, while being able to reflect different colours and patterns in different directions. What the researcher sees depends on their angle and for Richardson & Adams St Pierre (2008) crystallisation is a more accurate way for some researchers to validate data. In this study, reports from educational and health professionals have been used to validate parents' comments about their child, but the more important information came from the second adult where the two different lenses through which RMT has been viewed were analysed. This approach fits with Richardson and Adams St Pierre's (2008) description of crystallisation, two people offering their views on the experience of using RMT with their child.

3.4.6. *Data analysis*

Bogden and Biklen (2007) argue that before commencing any data analysis it is important for the researcher to step away from their data at the conclusion of the data collection. Some distance allows time for themes to emerge and alternative perspectives to appear. The author of this thesis transcribed the data soon after the interview, then left the data and came back to do the checking at a later date. Hearing the interviews again allowed time for reflection and the title of the thesis was subsequently changed to more accurately reflect the research that had been commenced.

Allowing data to generate conclusions is central to qualitative research (Mutch, 2005). Reporting on the findings honestly, identifying connections and possible oddities are

possible through the fluid characteristics of qualitative data. Setting analytical memos alongside an awareness of critical issues within relevant literature encourages meaningful links between analysis and current thinking (Bogdan & Biklen, 2007).

A thematic approach to data analysis was used in this qualitative thesis. The following steps were used (Bogdan & Biklen, 2007; Creswell, 2013):

1: Read through the data and sketch ideas.

The researcher conducted and transcribed all of the interviews and double checked all 14 transcripts. This process took several months and allowed a close connection with the data while providing time for reflection. Mind maps and memos were created to provide an overview of the project and the material gathered. Analytical memos were read several times.

2: Items of interest highlighted.

All data was moved into the software programme NVivo. NVivo tracks the name of the participant, the page and line number of all quotes so that all data is verifiable and there is a clear evidence trail. The data was combed for items of interest that related to the research question and these were highlighted within the NVivo programme.

3: Initial codes devised

An initial coding system was devised based on the research questions and the interview schedule. Relevant comments that had been highlighted initially within NVivo were moved into the devised codes and each code was assigned a colour for ease of reflection. The interview questions had been asked in a logical linear flow that followed the family's path from the identification of a need for intervention, through the RMT process and then to the evaluation of the process. Information from analytical memos and transcribed interviews were coded (Bogdan & Biklen, 2007; Coffey & Atkinson, 1996). The NVivo programme allows for comprehensive grouping of material and this was completed in a variety of ways. Material was often placed within several codes as the need arose.

4: Development of the 'Steps'

From the initial codes it became clear that the families had taken a variety of steps along their child's developmental path and these 'steps' were similar in all of the families. Symbolic 'steps' were developed to represent the family's path to establish a need for intervention for their child, through the range of child-focused interventions they used, finding RMT and finally how they had found the RMT process worked for them. However, for several families the evaluation step was a new aspect they needed to consider. The highlighted data was then moved into the relevant step using NVivo. These steps are shown in Figure 4.

5: Theme Development

From the three 'steps' taken by the families in relation to RMT, the data was analysed several times in a spiral manner (Creswell, 2013), with six themes being identified initially. The themes are summarised in Figure 4 below. The first two themes arose from the developmental questions and related to reoccurring comments from parents who had asked for help with their children. This led to a theme about associated frustrations and stress as they attempted to find the right interventions for their children. Having found RMT, the third and fourth theme related to the ways the families fitted RMT into their home routine. The final two themes related to the parents' perceptions associated with developmental changes they noticed in their children and the cost effectiveness of the programme. Within the six themes, further analysis identified nine sub-themes (Creswell, 2013). Peer review was engaged in regularly which ensured that the data was placed accurately within the themes and sub-themes. Confusion between the initial codes and the subsequent themes was discussed with peers and several changes initiated. Sub-themes were minimised and language changed to accurately reflect what was being reported. The process used is illustrated below in Figure 4.

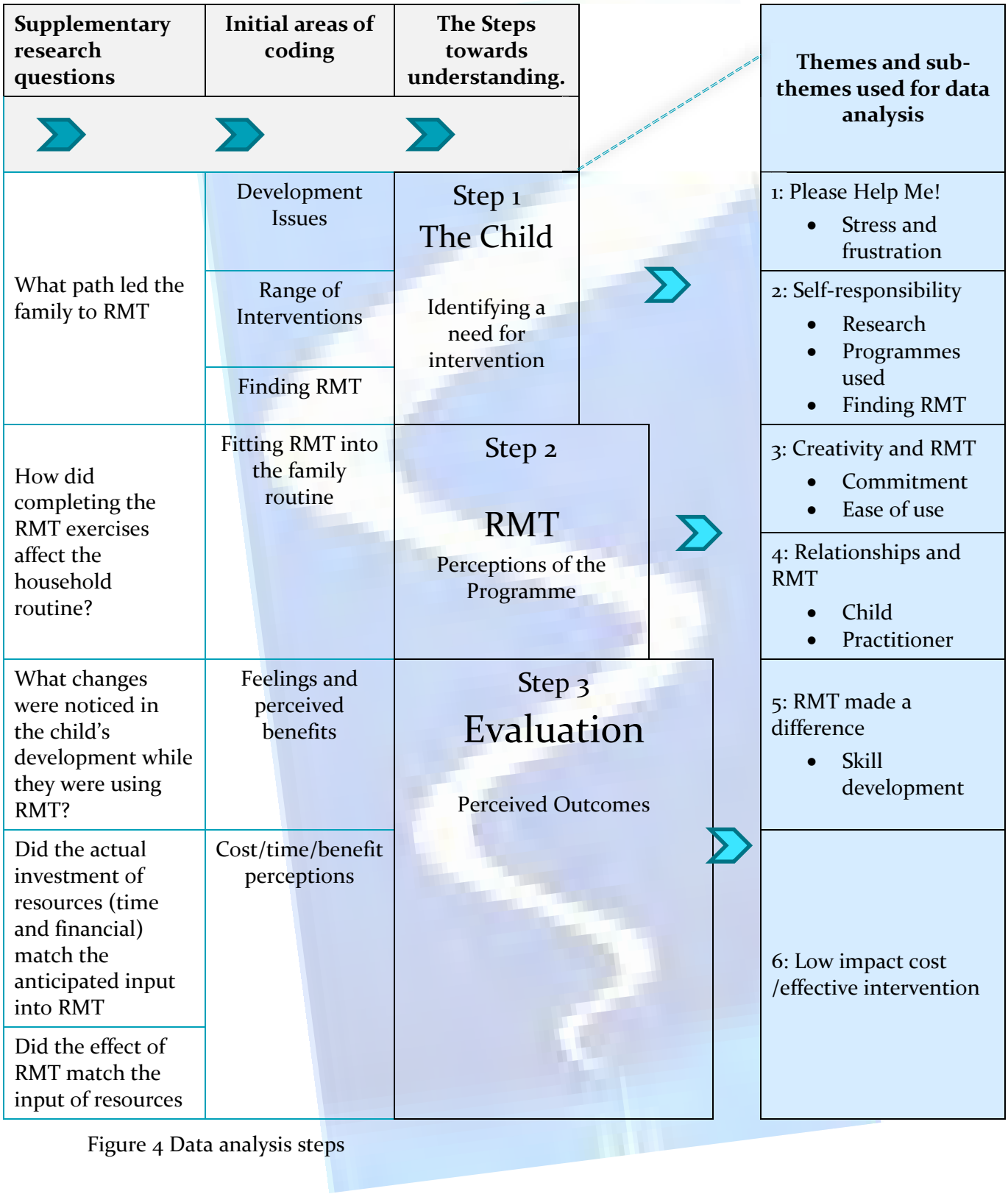


Figure 4 Data analysis steps

6: Consistency and Reflection

Ensuring that the researcher had not manipulated the data or imposed her views on the voice of the parents was discussed with peers. Clarifying language around the initial codes, the steps and the themes was also addressed through peer review. Each chapter was viewed by reviewers in draft form. Additional themes were identified, but it was decided that although the material was relevant it did not address the research question. On reflection from peer feedback some material was moved, and sub-themes clarified.

7: Selecting quotes to support ideas

Passages that best represented participants' views were selected by the researcher. Care was taken to also select alternative and supporting views.

8: Report findings

The following findings chapter collates the information within the theme it relates to. The researcher carefully considered all ethical issues as discussed previously, during the reporting of the findings, being aware of material that may identify the participants in any way (Bogdan & Biklen, 2007).

The subsequent discussion chapter analyses the data in relation to relevant literature with a view to developing a greater understanding of the perceptions of this group of parents and their experience with RMT

3.5. Methodology summary

Research design is arrived at through the theoretical and methodological focus discussed in this chapter. Interpretivism and phenomenology provide the theory behind the chosen qualitative methodology used in this research. A phenomenological research design was narrowed down to hermeneutical phenomenology as the methodology best suited for data gathering and interpretation.

The methods and tools used in the study have been described; from participant selection, providing information and gaining consent, through to gathering and analysing the data. Considerations involving rigour and trustworthiness have been highlighted with a goal of

obtaining valid data. Interviewing two adults from each family was part of the validating process with crystallisation rather than triangulation being used. These aspects of the study are supported by the theoretical basis of interpretivism.

Chapter 4. Findings

Hearing the voices of the parents describing their experience of Rhythmic Movement Training (RMT) within their family life

Research Question: What are the experiences of parents who have used Rhythmic Movement Training with their child?

4.1. Introduction

The findings of the study are discussed in this chapter as they relate to the themes and sub-themes that emerged from the data. The processes used to gather and analyse the data have been outlined in Chapter 3. Five open questions were used as part of the semi-formal interviews (Appendix A), and, as described in the previous chapter, through a system of thematic analysis, three areas for coding emerged; 1) focusing on the child and identifying a need for intervention, 2) using RMT within the family, and 3) perceived outcomes. The linear nature of the codes led to the concept of a pathway with a series of steps the families had taken. From these three 'steps' within the data, the 6 themes emerged (Figure 4). Figure 5 below summarises the themes and sub-themes. A discussion about the findings is covered in the following chapter.

All individuals identified in this chapter are referred to by their pseudonym and the RMT practitioners are not identified.

The RMT Path	Theme	Sub-Theme
Step 1 **The Child** Identifying a need for intervention	1: Please Help Me!	• Stress and Frustration
	2: Self- responsibility	• Research • Programmes used • Finding RMT
Step 2 **RMT** Perceptions of the programme	3: Creativity with RMT	• Commitment • Ease of use
	4: Relationships and RMT	• Child • Practitioner
Step 3 **Evaluation** Perceived outcomes	5: RMT made a difference	• Skill Development
	6: Low impact cost/ effective intervention	

Figure 5 Emerging Themes from RMT Experience Data

4.2.Step 1 – The Child – Identifying a need for intervention

As part of the semi-structured interviews, all parents were initially given an opportunity to talk about their child and describe the developmental issues they had experienced which then led them to RMT. Early analysis of the data indicated that many parents went through a similar process prior to the discovery of RMT. From the data gathered in this first step, two themes emerged; *Please Help Me* where parents talked about the help they asked for and *Self-responsibility* where they talked about what they did themselves to help their child.

4.3.Theme 1: Please help me!

Theme 1 was based on the developmental information the parents gave and strong feelings were expressed of asking for and seeking help for their child. Within this 'Please Help Me' theme a sub-theme emerged relating to the stress and frustration that occurred for the parents as they endeavoured to find the right help for their child. The development information also provided data about the diagnosis their child had been given by the health or educational professionals working with the family. Within the group of participants there was a range of challenges they noticed about their children which led them to seek assistance. These included: fine and gross motor skill delays, social and

communication issues, speech delays, auditory processing issues, dyspraxia, Asperger's Syndrome and Autistic Spectrum Disorder

Another point of interest is that all of the children in the study had some birthing intervention (e.g. Caesarean section, or incubator) or the mother experienced a set of highly stressful circumstances prior to or just after the child's birth. The individual situations surrounding the child's birth are outlined below and summarised in Table 1.

- Catman was diagnosed with Asperger's Syndrome. Gemma, his mother talks about the issues around the time of his birth "Catman was born with an emergency Caesar, three weeks early, and we had a number of problems, he ended up having invisible reflux which caused us all kinds of issues."
- Jasper was induced at 38 weeks' and diagnosed with severe dyspraxia. His mother had experienced several very stressful fainting episodes during the pregnancy.
- Poppy, born 5 weeks early, was delivered by caesarean section and spent a short time in an incubator. She was diagnosed as having Autistic Spectrum Disorder
- Thorin had a stress-filled delivery, his mother was very unwell post-delivery and she took some time to recover and bond with Thorin. He was diagnosed with Autistic Spectrum Disorder, which includes dyspraxia, visual and auditory processing challenges and vestibular issues.
- Max is a twin, and his mother experienced extreme pre-birth stress. He was delivered by caesarean section at 29 weeks' and post-birth his mother was very unwell requiring surgery and a stay in hospital. Max was in an incubator for several weeks with minimal physical touch. He has been diagnosed with global developmental delay.
- Zac's mother also talked of a very fast delivery and experiencing high levels of stress. Donna and her family "were in a situation where we were losing a business and things were crumbling behind [and] around us. So I think he had to fight to be here". Zac had auditory processing issues and behavioural challenges:
- Daniel was induced and had what his mother described as a fast delivery, his parents used RMT for social issues and speech delays.

Figure 6 collates the information parents gave about the child's delivery, the approximate time the parents noticed some difference in the child's development, the diagnosis the received and the range of intervention's that were mentioned through the interview process.

Name	Delivery	Age parents noticed difference	Diagnosis	Programmes mentioned in interviews
Catman	37 weeks' gestation Emergency C-section	18 months	Asperger's syndrome	Occupational Therapy Speech Therapy Davis Programme Educational Kinesiology Rhythmic Movement Training
Jasper	38 weeks' gestation Mother had fainting episodes before delivery	2 years	Dyspraxia	Osteopathy Educational Kinesiology Rhythmic Movement Training
Poppy	35 weeks' gestation Forceps delivery Incubator for a short time	18 months	Autistic Spectrum Disorder	ABA Rhythmic Movement Training
Thorin	Very stressful for mother	Pre-school	Autistic Spectrum Disorder Auditory and visual processing disorder Dyspraxia	Occupational Therapy/Physiotherapy Developmental Optometrist/ Vison Training Rhythmic Movement Training
Max	Very stressful event for mother pre-birth. 29 weeks' gestation. Emergency C-section Incubator	From birth	Global developmental delay	Osteopathy Educational Kinesiology Rhythmic Movement Training
Zac	Very fast delivery Mother very stressed about family issues	18 months to 2 years	Auditory processing issues Behavioural issues	SPELD. Osteopathy Educational Kinesiology Rhythmic Movement Training
Daniel	Induced Very fast delivery 9 days overdue	3 years	Speech delay Behavioural/social issues	Speech Therapy Educational Kinesiology Rhythmic Movement Training

Figure 6 Study Participants delivery, diagnosis and interventions described.

All parents talked about behaviours they noticed with their children that raised some questions in their minds. For Sarah, her need for help became obvious through the group interactions and these situations highlighted the challenges for her son:

> He was at Montessori, and had been right through Playcentre, he had done Kiwi GymbaROO and then he was at the Montessori Primary School and I became aware that things were amiss. I became aware that I should really take him home and explore why he wasn't engaging with the Montessori materials in the same way as all of the other children, even the disabled ones, in the class. He just wasn't engaging; he couldn't

> seem to find... all sorts of things were going wrong. That's when we took him and had all the tests. (Sarah)

For one family, there had been support available and then the support organisation reduced their availability as Stu described.

> We had CCS [Disability Action] until the age of 5 and then they disappeared. ...They closed some of their offices. So we sort of went off the radar at age 5. ...We tried to get funding for schooling through the Ongoing Resource (ORs) funding process, but we were declined on several occasions. And it wasn't until right at the very last year before going into secondary school that we managed to get that for him. [So between] 5 -12 [years we were] very much in the wilderness. (Stu)

Identifying the need for help was something all the parents did during their child's pre-school years, but the sub-theme of stress and frustration below then followed as these parents endeavoured to get help for their children.

Sub-theme: Stress and frustration

The sub-theme relating to the stress and frustration experienced by the parents also emerged from the developmental data. All parents described their child from a developmental perspective and their path of intervention. As Figure 6 shows, many of them knew early on (between the ages of two and four) that they needed help. Donna and Bella describe their situations below:

> Things were noticed more at Kindy that maybe he wasn't hearing things properly, or he wasn't obviously picking up things that he should have been picking up. (Donna)

> When Jasper was little, I suppose I knew from the first that something wasn't right, but I didn't want to acknowledge it until he was about 2. Mainly [the issue was] that he never cried for food. (Bella)

Several participants talked about the difficulties they had getting professionals to understand the perceived issues with their children when they did ask for help. Their requests for help were not always heard by the professionals they talked with or they received a mixture of advice. Two mothers indicated that they were not listened to by medical professionals as exemplified below. Bella took Jasper to a community child specialist and on inquiring about some developmental issues she made the following comments:

> I was told "Oh babies are all different in different things and have different developments." And I thought, I don't believe you, but anyway. I knew something wasn't right. So when he was about 2 or 2 1/2 we took him to the family doctor and then he suggested a [local] paediatrician, and she was great. (Bella)

Gemma knew that things were not following the normal developmental pathway but there were delays in the system that meant her child had to wait for 2 years to see a specialist:

> We had, from the time he was 18 months old, felt that things weren't developing correctly, ...we were on a waiting list, and we didn't see anybody properly until he was 3 1/2 years old. (Gemma)

Marcus also experienced difficulties getting professionals to understand their perceived issues. This is illustrated below:

> It was really a lack of speech development that prompted us to start seeking advice from various people. Who in the main reassured us that all was well, even though we thought, not sure if we agree, but OK they must know more than we do. It just got to the stage where we kept on going back to doctors and eventually got an initial Asperger's suspicion and then finally a year after that a confirmation that she was on the autistic spectrum. This was all still when she was pre-school. (Marcus)

These parents have highlighted the challenges they faced as they realised that there were some developmental differences with their child and then the frustrations they experienced as they asked for help. As the next theme shows they felt that a self-responsibility model was their only option.

4.3.1. Theme 2: Self-responsibility

The second theme identified in this study was Self-Responsibility. The data suggested that these parents knew that they needed to take action regarding help for their child. Programmes offered at school were used by some families, but parents described a range of interventions they had self-funded.

The parents interviewed were involved with their child's interventions. They felt a need to take responsibility for their child and their challenges. This was clearly articulated by Donna who implied that the system has let her down:

> I think a lot of it is having to do it for yourself. I don't think for me I can rely on the system. 'Cause he doesn't quite fit in that system. He does in

> some ways but he doesn't in other ways. I think a lot of it is 'do it yourself'. I can't rely on the system to help me, because it won't work. (Donna)

Gemma found the system did not meet her child's need in a timely way and this family not only paid for interventions, but decided to home-school their child as well. Gemma's comments below are similar to Donna's:

> Once we realised how ineffective the system was, because it took him until 3 1/2 for him to be seen and then the only help we got was the term before he was meant to go to school. We found that the system was very ineffective. We started actually paying for intervention, we got an OT, and we started paying for a speech therapist, all those kinds of things. (Gemma)

However, Gemma's additional comments indicate her awareness that not all parents were as involved with their children's programmes as she and Paul were:

> There are not many people we know that have been on our journey, we know a few, that have been on our journey where they've actively gone along and been involved in the intervention [as we have]. People we know have tended to send their children to school and let the school deal with the issues as best as they can. (Gemma)

Parents identified that the 'system' was not going to help them thus a self-research approach helped them make decisions that they believed would best meet the needs of their child.

Sub-theme: Research

This sub-theme relates to the research that parents undertook as part of their intervention decision-making process. They completed personal research to find options for their children as Paul describes below:

> Gemma mostly researched as I am sure you have picked up, and the more [research she did] we realised that we needed to get some expert help, so that's when [RMT practitioner] in this particular instance came to our attention. (Paul)

Virginia also explained a feeling several parents had, as to why she chose the range of interventions she had tried:

> ... you know as soon as someone says psychologists say or scientists say "Oh you know, you shouldn't trust it because there is no scientific evidence" It's like I don't care, if it works...I don't care if there's scientific evidence or not, the evidence is those children who have done the programme if they had had results. That's all I need. (Virginia)

Sub-theme: Programmes used

All seven families talked about the range of interventions they tried with their child. As Virginia put it, "What haven't I tried?" Parents talked about low-cost interventions such as osteopathy, diet, Scouts, Kiwi GymbaROO, and school intervention programmes, through to more expensive programmes such as Davis Dyslexia Programme, SPELD (Specific Learning Disabilities), Applied Behavioural Analysis (ABA), Vision Therapy and the Arrowsmith Programme. Parents talked about wanting to do as much as they could for their child and to achieve the best possible outcomes. They constantly monitored and changed their child's programme to help achieve improved results. All parents described being actively involved in their child's intervention programme and became involved in the conventional, well-researched interventions while also trying additional less-researched interventions when progress slowed.

Gemma and Paul self-funded a variety of specialist programmes as Gemma stated below:

> We have seen a private OT; we have seen a private speech therapist. We have done riding for the disabled...Only two years ago we did the Davis Autism Programme. (Gemma)

Virginia had tried many age-appropriate interventions which were started soon after Max's birth:

> What haven't I tried? .... So I did osteo work and chiropractic work then I did baby massage from as soon as I was well enough when I got them home...I did a lot at home as well, a lot of the baby programmes. I knew he was behind and struggling so I did music for babies, ... and then it got more pronounced. Then [he] started seeing a paediatric physio who we saw a least once a week. Then as he got older there was an OT, the physio, I went to a Kinesiologist. Also I went to naturopath and did allergy treatments. I went to [RMT Practitioner], I did eye tracking with him, but one of the recent programmes I got on to, I read books by Dr Robin Pauc, ... an amazing read. (Virginia)

Five of the families talked about the challenges of getting the right help and funding issues they experienced. Many of them had self-funded a range of interventions as their child was not eligible for government assistance. But they also monitored the investment and the return on their investment as part of the intervention process. Gemma, Bella, Marcus and Donna commented on this:

> My major criticism of the programme (Davis) is that it is not accessible to everybody because of the cost. It is extremely expensive and for Catman, who is a very difficult child to work with, for something that is supposed to probably take 7 weeks it actually took him 2 years to do the programme. (Gemma)
>
> I'd been talking to the headmistress and she said we could get a teacher aide, by donation, you donate to the hours. So for four years we paid for a teacher aide, full time... That took a lot of our funds, paying for a full-time teacher aide. (Bella)
>
> ...this was all still when she was pre-school. So our main intervention at that stage was ...ABA, [Applied Behaviour Analysis]. We did ABA for quite some years, and spent an awful lot of money, and Poppy did develop during that period, certainly became more socialised, and more eye contact, ... It got to the stage where ABA in terms of its return on investment was starting to ebb, and the main reason [we stopped] was we started noticing that it was driving Poppy nuts, because as you are probably aware it is quite repetitive. (Marcus)

This group of families tried a range of interventions with their children and at some point on the path they encountered RMT as a possible intervention.

Sub-theme: Finding RMT

This sub-theme about finding RMT show striking similarities. Six of the seven families found RMT through a recommendation from a health practitioner or friend. Donna's recommendation was through a SPELD practitioner;

> We did a SPELD assessment and things ...things were picked up there and she [SPELD practitioner] had suggested ways in which people might be able to help us and then it was finding someone who was probably closest. (Donna)
>
> I took him to the osteopath and he did cranial massage and things like that. And he told me about [RMT Practitioner] (Bella)

Several found a practitioner who used a range of techniques, of which RMT was one.

> … And because she does lots of different things, there is the Kinesiology, there's the Brain Gym, and it's the overall thing. (Lizzie)
>
> I did not hear about it or research it or anything. It was just within the repertoire that [RMT Practitioner] had. (Gemma)

Gemma was the only person who had discovered their practitioner through a book she read called *James' Gift. The Story of an Asperger family (Murray, 2006)*.

In a way, the families found RMT accidentally. None of them set out to find an RMT practitioner.

4.3.2. Summary of Step 1 – Theme 1 and 2

The parents identified the need for intervention early on in their child's life. Some received early support and others had to work hard to obtain the support they believed their child needed. All families engaged their child in a range of interventions and they self-funded a proportion of these. All families were involved in their child's programme and actively thought about possible strategies and solutions to the challenges their child presented. They showed a willingness to try a range of strategies, both conventional well-researched interventions and strategies supported by less research. They talked about wanting the best outcome for their child and were willing to try a wide range of options.

Stress was talked about by parents as part of the child's birth process and as part of the life they were living when the child was young.

RMT was one of the strategies that all the families used. They all discovered it, mostly through word of mouth, after trying other interventions and therefore had other programmes to compare it with. Their views about RMT are discussed in the next section.

4.4. Step 2 - Rhythmic Movement Training – perceptions of the programme

4.4.1. Theme 3: Creativity with RMT

Theme 3 emerged from the parents' descriptions of RMT and it relates to the creative elements they used to engage their children. The RMT exercises were carried out at

home, usually with support from the mother, after seeing the RMT practitioner. The fathers each said they were aware that the exercises were being completed, but work commitments meant that most rarely participated in them on a day-to-day basis. There were many comments from the mothers about the ease with which the exercises could be completed.

However, parents talked about creative ways they had adapted the exercises to their situation and their child's needs, from the time and place they did the exercises to the name they gave them. Some families had a set time they did the exercises, home schooling parents just slotted it into the school day as Gemma and Lizzie describe:

> In the early days he had no memory of what he was doing, but because we home-schooled of course it was easy in that we just slotted it in, so that wasn't a problem at all and also I think because we had a weekly appointment, it was like "oh goodness we are meant to do this before we see [RMT Practitioner]". (Gemma)

> So we would just have a routine where if he wanted, it was basically either we do it before school work or we would do it after school work before he had his free time, before he could go on the computer or something like that. It was part of the routine that we would just build into the day. (Lizzie)

Bella made similar comments using dance to help her child complete the exercises:

> I just slotted them in to what we were doing. I used to incorporate them into doing a bit of dance. (Bella)

Virginia found that making a game and giving the exercise a fun name worked for her family:

> Some (exercises) were easier than others. The easiest thing for me is doing it at night when they are in bed. So all of the feet rocking, the bent knees and pulling and things like that or lying over, and the boys love it, they call if their jiggles, I'm doing jiggles with them. But the wind down time when I am with them one on one, I find that the easiest time to do it, and I still do it, even if [RMT practitioner] hasn't said do this, I will just remember what ones and give them a go, one night I might do it and one night I might not. But Max falls asleep basically when I do it, he loves it.... I guess it became part of the routine, you brush your teeth, you got to the toilet, you get into bed, I do your jiggles, we read a book. So that was OK. (Virginia)

And while parents were creative, one child also liked adding his own creativity to the exercises

> He likes being creative even with his RMT he likes doing two at the same time and getting different rhythms going with his feet to his head or something like that. (Lizzie)

Creativity was something parents talked about in relation to the completion of the exercises, however the next sub-theme *Ease of Use* also enabled parent and child creativity within the exercise completion.

Sub-theme: Ease of use

This sub-theme relates to the fact that all of the mothers interviewed talked about the ease with which the exercises could be completed. Holly found it easy to fit into the after school routine:

> One of the very nice things about RMT was that it was quite easy to just slot into the routine. There were some exercises that for a while Poppy was quite happy to go and do for herself…It tended to be afternoons, mostly sort of just after school and it was just when Poppy tended to quite enjoy it as a wind down from what had been going on at school. (Holly)

Sarah talked about not only the ease with which the exercises were done, but the appropriateness for a child with sensory motor issues:

> It required less set up, it didn't require being face to the floor, it didn't require sitting yourself back on a chair…And also if you forgot to do things in the morning or if you didn't get a chance to do your therapy or if it was your day off, you could say let's do some quick rocking while watching the TV, or let's position you so that you can still feel what's going on even if you can't see it, or we could do it with some music or…. Very transportable. (Sarah)

And if the children didn't enjoy them, they would still do them as Lizzie noticed:

> So the activities were quite [easy], he didn't look forward to them, but he would do them… He would enjoy different ones. (Lizzie)

One father commented about the ease with which the exercises were completed:

> They were fine. My biggest complaint was I couldn't see where the benefit was for something that only took five seconds to do. (Falcon)

Ease of use was a factor for all of the families and enabled them to engage their children in the exercises.

Sub-theme: Commitment

Another interesting sub-theme arose from the range of comments about the level of commitment needed to complete the exercises. Many parents knew they could have done more work at home, but they did the best they could and the practitioners were realistic with them about family life and the expectations placed on parents. The parents accepted the limitations that family life placed on their ability to do the RMT homework as Gemma and Virginia commented:

> There were times when we weren't doing our homework, so we did not always do what we were supposed to be doing... So we'd see her, say every Friday, and in all honesty we never did it perfectly, but she would keep checking and we would have to keep doing it until it was sorted. So because we have seen her for such a long period of time we have been lucky to be indulged in doing it until we got it right. (Gemma)

> I know that if I did more [RMT] with him and spent more time doing them I would have quicker gains, but you know I have learned not to put the pressure on myself or him, you only do what you can do, so everything helps, the more I do the better it would be, the better the outcome, the quicker the results. But yeah, you just can't put too much pressure on him, on me, on the family. (Virginia)

The parents' comments show that they knew they needed to make a commitment to the exercises and while they were not perfect they stated that they did the best they could.

4.4.2. Theme 4: Relationships and RMT

Theme 4 relates to the relationships between adults and children as part of the children completing the RMT exercises. There are two sub-themes; parents talked about the positive relationship effects they gained with their child, and they talked about the relationship they developed with their RMT practitioner.

Sub-theme: Child

In this sub-theme about the relationships between parents and children when they were using RMT it was noticed that the parents commented specifically about this without

being asked directly. Two parents, Sarah and Lizzie talked about the experience of being with the child in an easy positive way:

> It was an opportunity to be with your child physically, actually making physical contact with the child to model the movements... And that the movements were very relaxing and to watch particularly Thorin go from what we called a non-yellow banana, to being more straight and relaxed. (Sarah)

> It was one on one time that I could have with Daniel, because he is a touchy sort of guy, ... he would like me doing the passive movements.... and it has been good bonding for him and me too, you know spending that time together and at times he probably didn't see the progress he's done but I've seen it and other family members have seen it. (Lizzie)

It was similar for Poppy, who had used other interventions before starting the RMT:

> The Rhythmic Movement exercises were gentle and she enjoyed some of them very much so that was instantly a bit of relief.... it was a very nice intervention as far we were both concerned. It was quite gentle and as I say we tended to do it as a bit of a wind down from school and something that we both, both enjoyed doing and unlike some of the other exercises, there really wasn't coaxing and pleading involved. (Laughs). Yes, as interventions go it felt like a very nice one for both of us. (Holly)

This sub-theme relating to child/parent relationships was noticed by three of the seven mothers and their comments show a range of positive outcomes in relation to the completion of the exercises.

Sub-theme: Practitioner

The relationships between the child and the RMT Practitioner was commented on by eight parents and emerged as sub-theme. The parents talked about the support and helpful advice they received and the skilful way the practitioners worked with their children. Bella commented that she believed that Jasper would not have achieved as much as he has without the help of the RMT practitioner.

> I mean, [RMT Practitioner], I can never tell you everything that she has done cos she has done so much for him. She has had patience where I haven't and she certainly tells me when I need to step back, which is great, (Laughs) no I mean, as I say, it, if it wasn't for [RMT Practitioner} he wouldn't be where he is now. And I really mean that. (Bella)

> I go to [RMT Practitioner] once a week and it is for an hour, and I think that that's more beneficial than what I put in at home. She does some amazing exercises with him and she's very calm. (Virginia)

Bella's comment sums up her feelings about her practitioner "I just know that [RMT Practitioner] is a godsend"

A positive relationship with the RMT practitioner was something that families valued. They appreciated the patience the practitioner showed with their child and the support they were offered.

4.4.3. Summary of Step 2 – Theme 3 and 4

The families described the ease with which they were able to integrate RMT into their daily routine and many of them talked about their children enjoying the process. For the children who did not find the exercises easy or enjoyable parents found creative ways to engage the child. They talked about being able to adjust the programme to meet the demands on their time and the transportability of the exercises. For all of these parents the experience had been positive and manageable within the family routine. Their perceptions as to the effectiveness and cost benefit are discussed in the next section, Step 3 of the path.

4.5.Step 3 – Evaluation - Perceived outcomes of RMT

The step below relates to the comments parents made about the developmental changes and perceived benefits of using RMT. A wide range of developmental changes were noticed while the children were using RMT, but several parents commented that they could not be sure that the RMT was responsible for all the changes. The themes within this step are; *RMT made a difference* which focuses on the perceived changes parents observed and the areas of skill development they observed, and *Low impact cost effective intervention*, which relates to the perceptions of parents in relation to the time/ money and resources invested in RMT.

4.5.1. Theme 5: RMT made a difference

Theme 5 relates to the differences the parents noticed in their children while they were using RMT. All of the families had used RMT for longer than six months. Both parents in several families commented that their children appeared to find the exercises easy to complete:

> The children both enjoyed the RMT therapy a lot more [than other therapies they had done]. It didn't kind of upset them in any way. (Gandalf)

Gemma talked about the immediate difference she noticed in Catman after seeing his practitioner:

> So [RMT practitioner] would explain [the reflex] to me, she would get Catman to do something [that] would show the reflex, that it was still there and then she would work with him and it would go. ... I know categorically, I saw him still do it, I saw her do something with him and he stopped doing it. It just blew my mind and I know there have been certain things that he has been able to do since that. I know they are the result of those [reflexes] being turned off and him being able to move on. I was just so grateful that I had somebody who knew that cos I can't think of anybody else who we have come in contact with, who would have even raised those things as an issue...There was never a point where I thought "there is something funny about this", it was totally and utterly logical and made sense. Totally. (Gemma)

Another father commented about the process of going to the RMT practitioner and his understanding of how reflex integration worked to make the difference in his child:

> Yeah, the whole thing fascinates me when I am there [with the RMT Practitioner]. Ok he (Catman) is there for an hour, he's doing things and it is just amazing. When he was talking he was talking with his tongue through his teeth, and yet the remedy for that had nothing to do with his tongue or his teeth, it was elsewhere and that is what I think is quite an amazing thing... Just saying, hey this particular reflex or this particular muscle hasn't been switched on and needs to have this sort of repetition to actually do that, and then when you do it you can actually see it, that's the cool thing out of it. (Paul)

Sarah summed up her experience of the difference RMT made to her child in particular she commented that the RMT exercises supported other work she was doing:

> But actually it gave him a lot, doing the rocking work I think really supported everything else that he was doing with his vision and his eye movement control. It is testament to the whole neuroplasticity question. Can you actually make a difference to an individual with autism to their eye movement control? And the answer is absolutely 'yes'. Can you have it so that they can look at people? And the answer is 'yes'. Will they feel comfortable looking at people, 'no', but, particularly not while they are listening, but, but can they do it when they need to, 'yes absolutely' and can they find things when they need to? 'Yes absolutely'. So those sorts of things, and I think the RMT and the theory behind it, not just the theory but the actual neurological process behind the RMT are very sound and solid and that was always something that I felt as a parent was quite comforting. That I knew that doing this was going to make a difference for my child. (Sarah)

In general parents noticed difference in their children both from seeing the practitioner and from doing the exercises. However, as the sub-theme below shows, there were specific skills that developed while the children were using RMT.

Sub-theme: Skill Development

The purpose of an educational intervention is to achieve skill development. This sub-theme focuses on parent comments that related directly to physical, cognitive and social skill development.

The parents made the following comments about their perceptions of the general benefits of RMT:

> Thorin found it quite effective. They seemed to settle a bit as a result of it. (Gandalf)

> Some of the rocking ones, she would go and do when she was at a loose end...There's one that she still does from time to time, that does seem to have a calming effect. (Holly)

> The first thing was his grounding; he wasn't so afraid of being in the open. You know, that took a few months and within a year we got that one solved. So he felt much better, he felt much better, he felt more connected, he felt more sort of in-tune with other people. (Bella)

Lizzie talked about a more even temperament and body awareness.

> Well he sort of evened out a bit more than what he was and he is more able to do two or three things at a time. So he is more comfortable and

> aware of what is body is actually doing which is one of the benefits. (Lizzie)

The comments above relate to a range of general areas of development that parents noticed. Below are their specific comments about changes they noticed in relation to physical, cognitive and social skills.

Physical

The physical skill development in this sub-theme was something parents noticed and they often had very clear measures on which to base their observations. Gemma and her husband Paul noticed that Catman quickly developed the ability to ride his bike and swim in a co-ordinated way after starting RMT:

> Catman would never have been able to ride a bike and he would never have learned to balance... But [now] he has enough to be able do certain things. I remember with swimming, he was doing work with [RMT Practitioner] ...there was one point where he just could not swim with his arms and kick with his legs, he could not do both. And this went on and on and on and on, and he has had swimming coaching from when he was 4 and he is still having it. And then [RMT Practitioner] did something and it happened. He was able to do both. It was like overnight. And I remember just sitting there absolutely amazed that that had happened. Things like that would occur almost overnight. (Gemma)

In a similar vein to other parents, Virginia noticed physical skill changes which initially she could not identify the cause of the changes, but when she broke it down realised that all she had been doing in an intense way was the RMT 'jiggles' as her family calls them:

> ... changes that have occurred, he always struggled to one to one counting. I know he is not dumb, but to do 1, 2 and point and count and get that in rhythm, he just struggled, but then just last weekend (click) he could do it, I noticed for the first time that he could do it. And the same with the bilateral integration, it has always been hard. Swimming and biking he couldn't pedal, I have a mountain bike and there is a tandem on the back, and you know it just goes click click click as he is going backwards or sitting there doing nothing but he pedalled for the first time in the weekend. So something is working, I don't know what it is.
>
> Researcher: So the combination you have got at the moment has obviously started to tee things up. So at the moment you are doing...?

> V: In all fairness I haven't done the stairs [an exercise programme] for the past 4 weeks so probably the only thing I have done are the jiggles at night and their gymnastics and their sport that they do. Yeah and the odd occasion Max will enjoy getting on the balance board. But umm that's only been sporadic so [RMT Practitioner's] work definitely has made an impact. (Virginia)

Gemma talked about co-ordination issues that were resolved through RMT:

> Things like that would occur almost overnight. Other things like being aware of his body, being able to turn parts of his body individually within his body, like turning his head without turning his whole body, knowing, realising that his arms are there, his legs are there, just being able to move in space and being aware of himself, being in a room and not banging into people, not getting a fright and just about leaping from one end of the room to the other, just those sorts of things.
>
> Researcher: Those sorts of things changed once you'd started RMT?
>
> G. Absolutely. Just being more physical. Catman is always going to be Catman, he is always going to have, be on the autistic spectrum, he is always going to have an autistic brain, however he is far more physically competent and physically connected in a manageable way than what he was before. (Gemma)

Physical skills were an easy measure for parents, the child was able to complete a physical task such as riding a bike that had previously been a challenge.

Cognitive and Social Skills

Cognitive tasks such as reading, writing, maths are the focus of this sub-theme, along with social skill development. Parents had measures, such as changing reading groups and maths skill development. However, with the increased cognitive skills parents noticed social skill development and they often mentioned them together.

Holly noticed changes in Poppy's laterality and a willingness to write with a pen:

> Recently being more ready to give writing with the pen a go, she really clarified the whole left/ right difference through RMT and that's pretty solid now. We're still having a bit of a challenge with shoe laces which we get some days and some days we absolutely do not. But she's become more willing to sit and have a try. I think that the whole relaxation thing, becoming less anxious thing, was the thing that people really noticed about her. (Holly)

Both Poppy's mother and father talked about the discovery of Poppy's ability to write using a computer during the time they were using RMT:

> ...a big thing I think with Poppy is the somewhat accidental discovery of her inner self, just purely by accident, Holly my wife got her laptop for her work and one day I suggested we just ask her [Poppy] a few questions on the laptop and see what happens. And it just unearthed this goldmine. My name is Poppy Otting, I am X number of years old, X number of years, months, days old...And since then she has been writing poetry, beautiful little essays, jokes, limericks. So there is this, that bright person that we discerned at the beginning of her life was still there, but had been covered over. So really we have been building on that since then. (Marcus)

Lizzie talked about a range of perceived benefits, both educational and social:

> ... one of the things was his handwriting which has just sort of tidied up a small bit, but not greatly. But he is much more confident with his maths which he was having problems with...He's much better... like playing team games cos we go to a support group for home schooling so we play sports there. And even after 6 months we noticed that he was not getting upset with the other players because he couldn't control what they were doing. It was one thing that he would always get upset with, he's much better at Scouts, when they are playing things like dodge ball, much more competitive boy games I think and he is much better at that too now...he didn't used to like going camping in the tents and stuff and he is a bit more open to it now. He still has a bit of trouble but he's much better than what he was a year ago. (Lizzie)

Donna also saw a range of benefits particularly some changes in reading and maths, but also positive changes in confidence:

> But now I think he is reading better, he's feeling more confident.... his maths is getting better and whether that is a combination of everything [I am not sure]. ... I think you can just see overall he's happier and better with himself... obviously his' b's and his 'd's and I mean there are lots of things she [RMT Practitioner] has done over time. And you go, waow that's cool, if that can help him in that area, fantastic. ...I don't know if you can see the benefits, you just know that, you put it together and something is working. Something has changed, definitely. What did he say "Mum I've gone up another reading group, Yeah!" Success. And that is huge for his confidence. (Donna)

Bella noticed changes in Jasper's ability to cope with open spaces which had been a significant challenge as well as an improvement in his reading once the teacher-aide was employed:

> The first thing [we noticed] was his grounding, he wasn't so afraid of being in the open. That took a few months within a year we got that one solved. I think. So he felt much better, he felt more connected, he felt more sort of in-tune with other people...it's his grounding and his [being] afraid of being in the open that we noticed. The other one was his preservation reflex, to start holding up his hands [when he fell over]. His reading is really good. His reading is at about a 10-year-old level. And that has really started picking up since we paid for a teacher aide. Before that his reading wasn't there. (Bella)

Catman was home-schooled and Gemma worked closely with his educational programme. The speed with which Catman improved is reading also appeared to co-inside with participation in the RMT exercises as Gemma explained:

> I basically did pre-literacy and pre-numeracy with him from when he was 5 until he was 8. When he was 8 he started to read. He now he is 13, he reads, you could argue that he reads age appropriate, that would definitely be the case for non-fiction, he chooses to read, I would say is slightly age appropriate for fiction, I think that's to do with content [and his] emotional development. (Gemma)

Gemma, also talked about the reading, maths and verbal skills progress:

> ... However, he is involved for the first time, in a primary Shakespeare group and he had to read aloud from The Tempest, and I used to teach Shakespeare to year 12 and 13s and I had him read out, and you know, admittedly I was with him and I could help him with it, but he read aloud a scene and I said to Paul, I was really impressed, he coped tremendously well with the language, he understood what was going on, he had the intonation right, I was absolutely amazed. So to come that far from 8 has been really impressive. Verbally he is absolutely fine, his language was delayed. Verbally I would say he is totally age appropriate. Maths, he did not start doing school Maths until he was a similar age and he is now totally age appropriate, totally age appropriate. His weakness, he has severe dyspraxia and so his writing is a big issue. It is a big problem, so his actual writing itself is probably his slowest developmental thing. He only started writing as such, probably two years ago, and I would say he is probably at best writing at a 7 or 8-year-old level, he only started spelling two years ago, his spelling is actually not too bad. (Gemma)

Several parents also commented that it was difficult to be certain what had caused the positive changes, but they did occur when they were using RMT:

> Yea we've been concentrating, one of the things was his handwriting which has just sort of tidied up a small bit, but not greatly. But he is much more confident with his maths which he was having problems with. Yeah, he is maturing quite well but I don't know if that is from the RMT or not. (Lizzie)
>
> ...his maths is getting better and whether that is a combination of everything [I am not sure]. (Donna)
>
> But then yeah, we can certainly see a lot of development. But it's hard to put down where that's come from. (Rob)
>
> Very hard to pinpoint. He is possibly calmer, but there are all sorts of things going on and it is hard to pin point what has made the changes. (John)

However, for Sarah, Bella and Gemma it was very clear that RMT was an important part of their child's intervention programme and they appreciated their RMT practitioner. When Sarah was asked how long it took for her to notice the changes, this was her response:

> It was pretty much immediate, he just went "oh yeah I quite like this" or he couldn't do very much before it was too much, but he could say, rather than being tied up in the doing, he could say "3 rocks, that's it for me". In our case it was crucial because without the RMT I wouldn't have known what to do. Period. So for us the benefit has been immeasurable because it has given me a way in to do something when there was nothing else I could do. (Sarah)

Several parents had not evaluated RMT in depth but when asked if she thought the RMT had been worthwhile for her son, Bella made these comments:

> To be honest I (pause) I have never thought about it, but I just know that [RMT Practitioner] is a godsend, I [don't] begrudge what we pay [RMT Practitioner]. It comes out of our pocket, it doesn't come out of funding or anything, so, I hadn't even thought of that. (Bella)

While some parents felt they could not pinpoint the cause of their child's skill development, they acknowledged that there had been change. For other parents there was a very clear link between skill development and the use of RMT. The next theme focused on the perceptions regarding benefits with the investment required.

4.5.2. Theme 6: Low impact cost effective intervention

Theme 6 relates to the time, cost and resources that parents invested in RMT. The parents felt that the amount of time they put into the RMT exercises at home was well balanced. Most spent about 5 – 10 minutes doing the exercises most days and the cost of the RMT practitioner's session was at a reasonable level. The families with children who had been diagnosed with Asperger's Syndrome or children on the autistic spectrum had a weekly appointment with their practitioner, whereas children with other challenges had fewer appointments, spaced further apart. Although parents were not asked about the cost of the sessions, several parents volunteered the information and sessions ranged from $45 to $60:

> It didn't feel out of balance I guess is how I would describe it. And again I am kind of speaking in relation it to vision therapy which was also going on at the time and that often did seem to be out of balance. It seemed to require a whole lot of visits to the office which were relatively expensive I suppose and it was quite frequent and it just went on and on and on. And I think with RMT we found it didn't take quite so much input to come up with some very useful things. (Gandalf)

The RMT sessions that families attended were all self-funded and this relates to 'self-responsibility' in Theme 2. Gandalf and Gemma made the following comments about the money they spent on RMT compared to other interventions they had used:

> I was writing the cheques (laughter) so, I guess I would say it was low impact compared with some of the other therapies we were doing. Certainly financially it was probably better bang for buck, but it addressed other aspects of Thorin's developmental issues, different to vision and I don't think there is any way we could have said we will just go with this and not the other. (Gandalf)
>
> Oh it is very cost effective, I mean, the amount of money, even though we have done it for a long time, the payment compared to other things that we have done is not a big outlay… I think probably the proof for us is how long we have stayed with it. (Gemma)

Paul, Catman's father made similar comments to Gemma:

> Financial for us that has not been a problem, we are fortunate enough to be in a situation where the cost of it has not been [an issue]. In terms of output matching input, I'd say definitely. The question would be; has it actually exceeded the input? And I would probably say definitely to that

> as well. I do believe that had we not taken that route we'd be a long, long way off with his development right now. (Paul)

All parents felt that the money and time they had spent had benefits:

> I think it was worth it because we had beforehand taken him to the hospital and he was diagnosed with a small bit of ADHD and that he could have gone on Ritalin and I didn't want that and for me this was much more worth it. Yeah. Much more worth it (Lizzie)

When asked about the cost of seeing an RMT Practitioner and comparing it to the outcomes Bella made the following comments:

> No doubt about it, no doubt about it. Yes, it has been an expensive and a long road, but we wouldn't have done it any other way. We wish we had started earlier, because then it might have made a difference somewhere else. So you know, paying [RMT Practitioner] and doing the exercise for an hour, she would cover more in that time than I might do in two or 3 exercises because I can't spend that full hour with him doing certain things, and so between the two of us it has been really well worthwhile. And it's worked out well. (Bella)

Holly also felt that that investment was manageable:

> It wasn't a sort of prohibitive financial commitment; it was finding the time. One of the nice things about it was that we started seeing changes quite rapidly and that is always a good encouragement to get that, and I would say that in particular was quite encouraging and also it being sort of a relatively low impact thing and seeing, certainly initially, quite rapid results for quite a low impact intervention was nice. (Holly)

Poppy's father Marcus also commented "The cost wasn't a factor, unlike ABA which was really quite a big thing", although he was unsure if RMT could take the credit for the changes they had seen in Poppy.

For Gemma it was a very worthwhile experience for her child:

> I mean in comparison to other things that we have done I don't think it is a huge outlay in time in comparison to other things that we have done. I don't think the amount of time we have had to do at home is huge at all in comparison to anything else we've done. I mean it has really only ever been 5 - 10 minutes a few days a week, which is minimal compared to anything else. I think for the quality of person that we have had involved in doing this and the amount of positive outcomes that we have had has been extremely worthwhile. (Gemma)

When asked about cost/benefit Stu summed up his feelings

> We never knew what the final outcome would be. And so we would go along to [RMT practitioner], I really didn't have any perceived perceptions of what the expected outcomes would be because there could be no expected outcomes. The outcome was just a general improvement in Jasper's ability to move, to speak. I mean his speech came on very quickly after that. So value for money I believe it was there. The cost of the actual programme on a weekly basis were I won't say negligible, but they were certainly well within the realms of our ability to pay. (Stu)

The mother's in this study were the adult that was involved with the child for a large percentage of the time. The fathers were interviewed as part of the crystallisation process to ensure that reliable data was gathered. However, in some cases it was the fathers that paid the bills, so they were able to comment about RMT from a cost perspective.

4.5.3. Summary of Step 3 – Theme 5 and 6

The overall comments about the financial and time inputs when compared to the outcomes were positive. Parents believed that many of the gains their children had made were as a result, in part, to the RMT their child participated in. The sessions were inexpensive and the amount of time required to complete the exercises at home was manageable within the family routine. Some parents, mainly fathers, were unsure about the effectiveness of RMT and could not attribute the developmental changes to the programme. However, they acknowledged that there had been changes in their children during the time they were using RMT.

4.6. Findings summary

The six themes analysed in the findings show what prompted parents to seek interventions for their child, how they went about that process and their perceptions of RMT that their child used. For this group of parents, the outcomes from using RMT had been beneficial and they had noticed changes in their child's level of skill. Four parents commented that while their child had made changes when using RMT they could not confidently say that RMT had enabled the change. For other parents it was very clear that RMT had been a significant part of their child's skill developments.

RMT was perceived by the parents to be cost effective and did not involve large amounts of time or resources.

The following chapter discusses the findings in relation to the literature highlighted in Chapter 2. This process allows the reader to see how the findings are positioned within the methodology and make sense of the conclusions put forward.

Chapter 5. Discussion

This chapter discusses each theme and sub-themes identified in Chapter 4, as they relate to the research question below and the literature reviewed in Chapter 2.

Research Question: What are the experiences of parents who have used Rhythmic Movement Training with their child?

5.1. Theme 1: Please help me!

The two themes in the first step relate to processes the families went through before they arrived at the decision to try RMT. The first group of questions in each of the interviews were designed to gather history about the child's development and give the parent time to build rapport with the researcher. However, information about the struggles and high levels of self-responsibility these parents engaged in emerged, thus making the themes highly relevant as to why these parents chose the RMT path.

All interviewees knew that, developmentally, their child was developing additional challenges that these parents had not observed in other children. Parents observed delays in the speech, physical skills and social skills of their pre-school children. They arrived at these conclusions through experiences with siblings and/or noticing a different level of skill in the child's peers in pre-school settings. Some families had their children's development professionally assessed at an early age, but for many it was just a 'feeling' they had that the child's development was not progressing normally and they believed they needed help. The voice of the parent is important and they often have insights as to their child's needs that others outside the family may not (Koh et al., 2010; Paige-Smith &

Rix, 2006). For the seven families in this study their 'feeling' proved to be correct and in five of the families, the children's developmental challenges have required significant levels of intervention. Research has shown that early intervention is more effective than later intervention in affecting outcomes (Tomasello, Manning, & Dulmus, 2010), and parents need support to obtain the necessary help. Some families felt that the support from child development professionals they received and access to interventions took too long to commence and this led them to look for alternatives.

5.1.1. Sub-theme: Stress and frustration

As discussed in Chapter 3 – Methodology, Bronfenbrenner's bio-ecological system theory placed the child at the centre of a range of systems (Bronfenbrenner, 1997, 2005). It is these systems that Bronfenbrenner believes have a significant effect on the development of the child. In all the families interviewed the 'systems' as identified by Bronfenbrenner were complicated which was a source of stress and frustration for them. Two examples of this are; families choosing to home-school because they believed that being in a school environment would create additional stress for their child, and a family having to pay for their child's teacher aide. The parents felt a need to adjust the 'system' to better meet their needs.

All children in the study had experienced some maternal stress or stress associated with the birthing process. The maternal stresses, usually health-based or related to the family's microsystem and mesosystems; i.e. work situations and health professionals, were part of each child's delivery. Several scholars (Capute et al., 1984; Damasceno et al., 2005; Goddard-Blythe, 2008; McPhillips & Jordan-Black, 2007a) attribute reflex retention to stress encountered, before, during and soon after birth. This area has not been well researched and a longitudinal study would need to be completed to establish any possible link with stress at birth and retained infant reflexes. Several parents described extreme stress before and around the time of the child's birth. However, in one family with a set of twins, who had both experienced the same pre-birth stress, Max was diagnosed with global developmental delay while his twin was functioning well within his family and educational setting. If stress was the only factor contributing to reflex retention, it might be expected that Max and his twin would have similar issues.

Another area of stress the parents identified was having to fund interventions for their child. Additional financial stresses and time pressures were identified. Parents talked about applying for funding but were in many cases unsuccessful. They felt that they had no choice but to personally fund the interventions they believed would help their children. Within Bronfenbrenner's (2005) theory of bio-ecological systems the mesosystem and exosystem play a part here: funding within the school system and the relationship between the family and the schooling system may have an effect on the development of the child.

Frustration was evident in the responses of the seven families in this project. The interplay between the many people involved with the family; the school or early childhood setting, health professionals, family members and siblings were influential in the outcomes the family achieved for the child using RMT. Three families had extended periods of time where they home-schooled their children in an attempt to reduce the stress for their child and the family. From Bronfenbrenner's (2005) perspective they were taking charge of their child's micro and mesosystems in an attempt to improve their child's educational and social outcomes. In the case of Gemma and Paul, the fact that their child was now reading at an age-appropriate level and functioning well within their family supported the decisions they had made.

Families recognised that the amount of time they were able to make available to devote to the child doing RMT determined the outcome. They appreciated that the RMT was beneficial, but realised that they needed to fit the exercises around the whole family. This highlights an issue with the programme being completed at home. Families have many demands placed on their time. Children with skill challenges take longer to complete tasks (Mather & Morris, 2008) and finding time to fit home-based interventions into a routine is an additional stress for a family.

Tomasello, Manning and Dulmas (2010) discussed the need for Family Centred Care as a way to minimize stress and frustration for families and enhance self-determination in relation to the care of their child. However, several parents commented that they were not listened to by health professionals or that there was a lack of understanding about skills and behaviours that fell outside the normal range of development. The stress for the

parents was that they knew there was an issue for their child, but they did not receive the help sought at the time that they identified the need. This could be a case for health and educational professionals requiring a greater depth of training around the recognition of a child needing specialist child development knowledge and intervention. All of the families gave the impression that they did not receive as much professional support as they needed which is why they were forced to make their own decisions about their child's intervention plan. Similar situations were found in a study completed by Worcester et al. (2008); parents of young children with challenging behaviours expressed similar feelings about support, stress and isolation. Their research suggested the need for changing the way child assessments were carried out. They also observed that the qualitative research process in itself appeared to have a therapeutic effect. This was not followed up in this study but it does add to future possibilities for study.

5.2. Theme 2: Self-responsibility

The need to take charge of the interventions for their child was a common theme for all of the families in this study. It was noted that all the families were two-parent families with at least one parent working full-time. They all were able to budget so that they could fund the interventions they chose, although some programmes were discarded due to the high level of financial commitment. For parents with lower incomes or for single parent families, these options may not be available and, as many of the parents in the study said, they appreciated being in a position to try additional interventions that might provide another avenue for skill development opportunities for their child.

Two parents commented directly that 'the system' was not going to meet their child's needs. They felt that they needed to take charge and actively seek ways to help their child. Several families believed that 'the system' failed them. In particular, long waits to see professionals prompted them to take more immediate action. This feeling is supported by research completed by Williams (2005) where children's developmental issues were not identified until they were at school, and Hendrickson et al.'s (2000) research that found a group of parents who had been prevented from accessing early intervention for their child. Neither of these studies assessed what action these parents took, but together they

highlight the problem of parents seeking intervention for their child's developmental challenges.

From the interviews it was clear that this group of parents were well involved in their child's development and wanted to achieve the best they could. For all of the families in the study that meant using a self-responsibility approach. It could be concluded that most people using RMT are self- motivated, particularly in light of the current self-funding nature of the programme. The higher levels of motivation towards their child's educational outcomes could in fact be a significant factor in the progress the child made. Parents in the study completed by Koh et al (2010) expressed similar levels of motivation towards the educational outcomes for their children.

5.2.1. Sub-theme: Research

Researching options and possibilities was a very common theme with all the mothers in this study. In a previously discussed study completed by Koh et al. (2010) the parents talked about the research done and interventions tried before settling on a particular programme. The mothers in the current study talked about the research they had done to find interventions they believed best suited their child's needs. They talked to people, read books and were guided by professionals they encountered. The fathers did little of the research but they were aware that their wives/partners were doing research and they supported the decisions they made. All of the mothers who were interviewed seemed to have an attitude that they did not have time to use only things that were evidence-based, especially if they were not getting the changes in their child that they were expecting. It would appear that the parents who are willing to try programmes such as RMT, are highly motivated towards improving things for their child and want to try whatever they can.

The support given to parents by their RMT Practitioner was mentioned in many interviews. A study completed by Paige-Smith and Rix (2006) highlighted parental satisfaction as an essential part of the success of an intervention programme and several parents commented on the importance of the support they received from their practitioner and that was a factor in continuing with RMT.

5.2.2. *Sub-theme: Programmes used*

That a wide variety of programmes were used fits with the inquisitive natures of the mothers in this study. All had utilized programmes that were offered at school, as well as osteopaths and physiotherapists, occupational, speech, vision and nutritional therapists. Community based programmes including Kiwi GymbaROO, Scouts and music classes were mentioned. It seems that these parents were willing to try many things and understood that development is multifaceted. RMT was found through word of mouth, and for one family through a book. This indicates that RMT is not widely known in New Zealand.

Investing resources in higher-priced programmes was mentioned by five of the seven families. The Davis Programme had been used by one family, but the required investment prohibited its further use. Another family had used ABA, found it effective for a while but stopped after the effect for the child ceased. The parents commented on the expense of the ABA programme and that while it was working for the child, they viewed the investment in a positive light, but when the effect lessened they reassessed their participation. One family used Vision Therapy which required a significant outlay, however they believed that it had been of significant benefit for their child and when combined with RMT the outcome had been very positive. The fourth family had used many programmes including Integrated Listening System (ILS), but was looking to begin the Arrowsmith programme with their child. The mother had spent a significant amount of time researching this programme and while the investment was high she was convinced through the anecdotal reports from parents using the programme that her child would benefit and it was worth trying. The fifth family had used SPELD and although it was expensive they had found the experience worthwhile. The approaches of the seven families fits with the Koh et al. (2010) findings; parents actively look for ways to help their child and often they try a wide range of programmes.

Finding RMT

Currently, reflex integration assessment and reflex integration programmes are not widely used in educational settings in New Zealand. None of the parents in the study had

researched reflex retention as a possible cause for their child's developmental challenges prior to finding out about RMT. However, they accidentally came across it through the health and educational professionals they encountered. The focus by governments on evidence-based practices (Mather & Morris, 2008) may partly be why this information is not well known. While there is some research on reflex based programmes (Blythe, 2005; Brown, 2010; McPhillips & Jordan-Black, 2007b; Williams, 2015), the efficacy of such programmes needs to be researched more thoroughly as possible options for children.

5.3. Summary of Theme 1 and 2

Theme 1 and 2 focused on the child and the parents' perceptions about the need for early intervention for their child's developmental challenges. The first step on the path to RMT was described. Parents' noticed that there were additional challenges for their child during the pre-school years. There was significant stress and frustration expressed in relation to the lack of help available and the delays taken to get help organized for their child as has been identified in other studies (Hendrickson et al., 2000; Williams, 2005). It would appear that for this group of children 'the system' did not meet their needs.

All of the parents had adopted a model of self-responsibility and it was this path of self-funded interventions that led them to RMT.

5.4. Theme 3: Creativity and RMT

The RMT exercises are set up in such a way that there is room for families to be creative in the way they are completed. The participants in this study appreciated this element of the programme and commented about it. Examples included the incorporating of RMT in dance moves or renaming the exercises as the 'jiggles'. The flexibility with which the exercises could fit into family life was commented on by several parents, it just "slotted in" to what they were doing. These comments are significant if the programme is to be used in a classroom setting and this is where further research could be useful. The creativity of the parents was apparent, and they still perceived positive outcomes.

Literature relating to how parents fit a reflex integration programme into their family routine was not able to be found. The current reliable literature is all classroom-based, even though some programmes are able to be completed at home. The Reynolds et al. (2003) study had the children completing the exercises at home, but the controversy surrounding this study leaves some doubt over the reliability of the results. It would appear that researchers find a classroom teacher easier to monitor than a group of parents in their homes.

5.4.1. Sub-theme: Commitment

The need to be committed to the exercises was commented on by the mothers in the study. Two mothers said that they were aware that if they had committed more time to the programme then their children would have made greater gains. However, the level of commitment did not feel high. With the ability to be creative as to how the exercises were completed, parents felt it was manageable within their routine. This factor is essential when the need for good outcomes relies on the completion of the exercises. Some exercise interventions require significant amounts of time and resources while for others the levels are minimal; the Arrowsmith Programme involves 3 – 4 hours each day of intensive work at an accredited Arrowsmith School (Arrowsmith-Young, 2016), the Primary Movement Programme involves 10 minutes per day, completed at home or in a classroom (McPhillips, 2014). The Arrowsmith Programme has not attracted any empirical research to-date and all Primary Movement research to-date has been classroom-based (Brown, 2010; McPhillips & Jordan-Black, 2007b) with the teacher, not the parents, making the commitment.

5.4.2. Sub-theme: Ease of use

All of the mothers talked about the ease with which they could complete the exercises. This is essential when requiring parents to complete something extra within their schedules. Some parents compared RMT to other interventions, and in ranking them by their ease of use, RMT came out one of the easy ones. Transportability was a word used by one mother and this was echoed by other mothers. The lack of specialized equipment or setting seemed to appeal to the parents. This appears to be important for families, and

would certainly be a factor for a classroom teacher if they were wanting to integrate RMT into their teaching programme. Literature comparing the use of similar home-based exercise intervention programmes was not able to be found. The studies completed by McPhillips and Jordan-Black (2007b), Brown (2010) and Williams (2015) focus on educational outcomes.

5.5. Theme 4: Relationships and RMT

5.5.1. Sub-theme: Child

The rapport between parent and child develops the microsystem within which they live. (Cicchetti et al., 2000). When a child has skill challenges, it can be difficult for parents to find positive ways to interact with their child. It is understood that parent interactions have an impact on their child's development (Blacher, Baker, & Kaladjian, 2013) and developing opportunities to have positive interactions is important. Blacher et al. (2013) found that parents were able to have higher numbers of positive interactions in unstructured activities (e.g. playing in the park) than in structured activities (e.g. completing homework), but it is often structured activities where parents feel the need to intervene. Several parents in this study commented that the RMT (a more structured activity) provided a positive platform for them to interact with their child which was important to them. One mother felt that she spent much of the day correcting her child and diverting him, whereas with the RMT, although it was structured, it was an easy and fun time. The need to develop strong attachments is clearly beneficial for children (Pace & Zavattini, 2011) and if RMT plays a positive role in that process then that in itself is a beneficial outcome.

5.5.2. Sub-theme: Practitioners

Parents talked about the positive effects the RMT practitioner had on their family. They were offered support and information in addition to the practitioner's high degree of patience with their child. Words like 'Godsend' and "I don't know what we would have done without [RMT Practitioner]" were common themes. As the Paige-Smith and Rix study (2006) illustrates, when parents are supported through their child's intervention

there are improved outcomes. It would appear that the RMT practitioners used in this study understood this aspect of the work they do. Parents talked about their child enjoying the time with their RMT Practitioner and how well the child worked during the session.

5.6.Summary of Theme 3 and 4

The parents in this study were all supportive of RMT. It was easy to use, and it fitted into their family routine. They acknowledged that a level of commitment was required, but when they compared this with other interventions, RMT came out very favourably. If parents are to be asked to complete a programme, ease of use appears to be something that is important to them.

Relationships were identified as an important theme. Parents appreciated the opportunity to complete a structured activity in a positive way and they felt that this improved their relationship with their child. This in itself is significant as positive parent-child relationships are essential for development (Beijersbergen, Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2012). The relationship with the RMT practitioner was also seen as significant by parents.

So the question remains; Does RMT make a difference? In the next section the parents' perceptions about changes in their children are discussed.

5.7.Theme 5 - RMT made a difference

The RMT exercises are neurologically based, focusing on brain maturation beyond the reflex-based beginnings of life outside the womb (Blomberg & Dempsey, 2011). Within the experiences of the parents interviewed, a range of skill development was observed. These observations were able to be grouped into three sub-themes. Physical, cognitive and social skills. Research completed by Diamond (2000, 2007) suggests that genes and environmental factors are fundamentally interrelated when it comes to development. She discusses the connection between physical, social and cultural environments and their interaction with our genes. She suggests that a broad approach to intervention needs to

include all aspects of development, with further research needed in placing relative importance on the different aspects of development, including movement-based activities. Parents in this study talked about a range of changes they noticed in their children and these comments combined with the movement-based aspect of RMT have synergies with Diamond's approach.

The children's emotional well-being appeared to improve while the family was using RMT. Parents talked about children 'enjoying' the exercises and how the children were calmer after completing the exercises. There are several possible explanations for these outcomes. The rhythmic aspect of the exercises is said to have a calming effect on a child (Blomberg & Dempsey, 2011), the child may like the physical nature of the exercise or the child may like the one-on-one interaction with the practitioner or parent. The simplistic nature of the exercises and their ability to be adapted to the child's situation enabled parents to find a positive option for completing them. Parents also commented that RMT appeared to support other programmes they were engaged in.

For one child the first big development the family noticed was his ability to negotiate around a big space. The child was able to move directly from one activity to another without having to stay close to a wall and thus take the 'scenic trip' around the educational setting. This seemingly small change lessened the child's anxiety related to large spaces, and therefore had a significant impact on his functioning within his early childhood centre setting.

The mothers in this study provided greater detail in relation to their child's skill development. All of the mothers were full-time care-givers or in part-time employment. Fathers were aware of changes and skill developments in their child but did not have access to the same detail as the mothers. This is supported by an American study (Pedersen, 2012) that showed mothers were predominantly the primary caregivers in two parent families, particularly in relation to time-spent with their children and regardless of how much work they did outside the home. However, in Pedersen's study, fathers believed they are well involved and their parenting was not affected by time away from the family in paid employment.

There were some comments from parents, particularly fathers, stating that they were not able to confirm that the changes noticed in their child's development could be attributed to RMT. There were other activities being completed at the same time which could have been the reason for the developmental changes. Other parents, particularly the mothers, clearly stated that the changes in their child happened while they were doing the RMT exercises.

5.7.1. Sub-theme: Skill development

Physical skills

Studies showing improvements in physical skills when completing reflex integration programmes were limited. However as already mentioned, Diamond (2007) believes that all development is inter-related. Parents talked about improved skills associated with bike riding, ball skills and swimming. From their perspective these were highly measureable skills. While using RMT these activities suddenly became easier for their child.

Brown's study (2010) showing fine motor skill improvement when a reflex integration programme was used resonated with some of the comments parents made. Parents talked about improved writing skills, particularly neater hand-writing developed when using RMT.

Cognitive skills

Research of the use of the INPP and Primary Movement programmes shows improvements in reading ability when using reflex integration-based programmes (Blythe, 2005; McPhillips & Jordan-Black, 2007b). Participants in this study commented that reading was an issue for their children. Several parents talked about reading skill increases and maths improvements they believed happened while the children were using RMT. McPhillips and Sheehy's study (2004) showed the prevalence of persistent primary reflexes and motor problems in children with reading difficulties. Blythe (2005) concluded that the INPP programme was most effective when used with children who were underachieving academically at school and had elevated reflex scores. None of the children in the study had been systematically assessed for their levels of reflex retention, but their practitioners

were using a reflex integration programme with them. In Blythe's meta-analysis there were significant improvements in reading and spelling after children had completed the INPP reflex integration programme. In this study it was parents' perspectives of RMT being studied rather than academic improvement using standardized testing. However, many parents commented on their child's improved reading while using RMT.

Social skills

Children with social skill challenges were highlighted by several families. They noticed that their child did not integrate well in social situations. Five participants had siblings at home which made their lack of social development more obvious to the parents. Taylor et al. (2004) concluded that a significant proportion of boys with retained reflexes displayed higher levels of impulsive, emotional and problematic behaviours than boys with integrated reflexes. The parent comments support this in that most described social immaturity and behavioural challenges. These issues began to resolve while the children were using RMT with parents noticing that their children were more engaged with others, as exemplified by children being prepared to go on outings such as Scout Camps.

5.8. Theme 6 – Low impact cost effective intervention

This final theme discusses the impact of the intervention as it related to cost and resources. While it is possible to find a range of sub-themes, the discussion has focused on the research question which relates to the perceptions of the parents in relation to RMT, not for example 'how the programme was funded', but did the inputs match the output.

The parents liked RMT as an intervention. All commented that it was easy to complete and was cost-effective. However, it must be remembered that these families had all used RMT for longer than six months and so people who did not like it or found it too hard to get working would have possibly dropped out of the programme. This fact has been acknowledged as part of the research methodology, but as Koh et al. (2010) state, the information gathered from parents who have been using a programme for an extended period is more reliable than from those who have only experienced a programme for a short time.

Several families had used other self-funded interventions. They all commented that RMT was cost-effective when compared with these programmes. One parent commented that she believed that RMT had helped keep her child drug-free; her perception was that his ADHD behaviours could have resulted in him being put on Ritalin. The efficacy of RMT is not being tested in this study, and it would be interesting to investigate this claim. Could children with a mild ADHD diagnosis and retained reflexes remain Ritalin-free with reflex integration exercises?

Family budgets are usually stretched to cover the many expenses a family incurs when raising children. The perception of cost-effectiveness is as important for families as it is for educators choosing a programme that may improve learning outcomes. The efficacy of the programme is now an aspect that needs further investigation to sit alongside the perceptions of these parents. Literature regarding the self-funding of early interventions was not found and is an area that could also be further investigated.

5.9.Summary of Theme 5 and 6

The final two themes related to the parents' evaluation of the programme both in terms of outcomes for their child and of cost/time/benefits. The mothers noticed significant changes in the skill development of their child, from physical skills of bike riding, to writing and reading, and, importantly, social skills. Their clear perception was that while doing the RMT exercises their child's skill level had changed. The fathers did not notice as many changes, and they were less willing to attribute the changes to RMT.

In terms of cost and time commitments, all parents felt that RMT was good value for resources committed. This aspect was important for the families as they juggled the family budget.

Chapter 6. Implications and conclusion

6.1. Conclusion

The preceding chapter discussed the themes generated by this study. The aim of the research has been to give a voice to parents who have used RMT with their children. Prior to the study, an RMT practitioner had assessed all children as possibly having retained reflexes and had prescribed a course of exercises that were completed in the home. The parents had used RMT for a minimum of six months with their children which adds rigour to their comments.

The key findings are outlined below;

From the data gathered, it has been concluded that once the parents had established in their own minds that their child needed additional developmental or behavioural assistance, their path was not a smooth one. A wide range of advice was given, which was confusing for parents. Some found it difficult to convince medical and educational professionals that there was a problem with the development of their child. All of the families participated in a range of intervention programmes in an attempt to achieve the best possible developmental and behavioural outcomes for their child. They were willing to try interventions that were not evidence-based if they believed they could be beneficial to their children.

The parents typically found RMT by word of mouth. They all had a view that they needed to assume self-responsibility and take a self-funding approach to their child's challenges. They appreciated that they were in a position to be able to fund additional assistance for their child.

RMT was found by the mothers in the study to be easy to use within the family routine and through a range of creative solutions they were able to achieve high levels of compliance with their children. The parents described it as a cost-effective, low-impact intervention with a range of perceived physical, cognitive and social skill improvements

for their children while they were using the RMT exercises. Additional benefits included an improvement in the relationship between the mother and child using the RMT.

6.2.Strengths and limitations of this study

This study has comprehensively examined the perceptions and experiences of seven families (14 parents) and their experiences with RMT. To-date the focus of empirical research has not been on the perceptions of parents and reflex integration programmes and this has been a strength of this study. Parent perceptions are seen as an important part of the study of intervention programmes for children (Koh et al., 2010). All parents who agreed to participate did so fully, with no families withdrawing from the study.

Additional strengths of this study are its grounding in rigorous methodological processes to ensure that credible data could be gathered and conclusions made. All interviews were transcribed by the researcher, thus ensuring in-depth knowledge of the material in each interview. Several earlier reflex integration studies limited their focus to one or two reflexes (Blythe, 2005; Brown, 2010; McPhillips & Jordan-Black, 2007b; McPhillips & Sheehy, 2004). However, in this study, the reflexes being integrated were not the focus. A final strength is that this study was based in the homes of the participants where others have been based in classrooms. This offers a different perspective and highlights the challenges families have when carrying out programmes at home.

While this study provides a range of useful information, there are some limitations. The number of participants is relatively small, as is common with qualitative research (Creswell, 2013), however their comments match the anecdotal comments from parents that the researcher has contact with through her work as a teacher.

The range of developmental and behavioural challenges that the seven families used RMT for could be seen as a limitation. Due to the differing challenges of each child, comparing the experiences of families who are all experiencing similar issues was not possible. However, the variations do highlight the extensive range of developmental challenges where families are using RMT as an intervention.

All the participants were in two parent-families with one parent working full-time and the other parent not working in paid employment or working part-time. This does not provide a representative sample of the make-up of current New Zealand families. However, the self-funding nature of the programme clearly excludes families on low incomes. Cultural diversity within the participant group was limited to one Australian mother, with the rest of the families being of New Zealand European descent. Again, this does not represent the cultural mix within New Zealand communities. The reason for this was not obvious and was not explored.

6.3. Areas for further study

This study has highlighted several areas that could be investigated further and they are addressed below in relation to the themes that emerged as part of the study.

Theme 1 and 2: The Child – identifying a need for intervention

This theme identified three areas for further study. Firstly, the issue that all of the parents experienced; having to work hard to get the help they believed their child needed. Is there an issue of children falling through a gap when it comes to receiving the developmental help they need in a timely manner in New Zealand? Are community-based health and educational professionals qualified to recognise developmental and behavioural issues early? Several parents were told there were no issues to worry about, only to find that their child was later diagnosed with Asperger's Syndrome or Autistic Spectrum Disorder. Are we picking these issues up early enough? The parents in this study clearly stated that they knew there was a problem with their child early on, yet their concerns were discounted by professionals.

Secondly, the participants participating within the interview process is an area that could be investigated further? Did the interviews have any therapeutic value for the families involved as suggested by Worcester et al. (2008)? Did they see opportunities for their child after the interview? Were any un-answered questions clarified after talking about their experiences?

The final area of potential study is the question; to what level are parents self-funding early interventions? It would appear from this group of parents that there was a high level of self-funding of interventions. Many of the interventions were founded on little or no research associated as to the efficacy of their programme, yet parents believed the programme was helping their child. How many programmes have parents tried that did not work for their child? There are many questions about the behaviour of parents in relation to early intervention when they are not able to access help they believe their child needs. Parents from low-socioeconomic groups have fewer options available to them, but do they believe the outcomes for a child with developmental challenges would improve if they did?

Theme 3 and 4: RMT – Perceptions of the programme

The parents clearly indicated that RMT was easy to use at home. However, could it be used successfully in a classroom setting and does the programme achieve good results in relation to skill development of a group of children? It appears to be cost effective, highly transportable, requires little or no equipment and takes a small amount of time. All of these factors are attractive to teachers with limited resources (funding or time) to complete additional programmes within an already full curriculum.

Theme 5 and 6 – Evaluation – Perceived outcomes

This would appear to be the most significant area for further study. RMT has many supporters. Anecdotal reports from parents who have used it are favourable and the perceptions of the parents in this study indicate a range of positive outcomes. However, the question needs to be asked; does RMT actually make the changes for children the way the parents' perceptions indicate? To date there have been studies that have assessed other reflex integration programmes (Blythe, 2005; Brown, 2010; McPhillips & Jordan-Black, 2007b), but RMT has not attracted any evidenced-based research. The findings of this study indicate that this might be the next logical step to take.

6.4. Recommendations

The information in this study raises some further considerations for parents, teachers and policy makers and it is not just about RMT. The main point is that parents need easier access to a wider range of assistance and interventions to improve educational and behavioural outcomes. Maybe parents of children with challenges could be offered some discretionary funding where they were given the opportunity to choose how they spend that money in relation to interventions they would like to try. Children in New Zealand have their Early Childhood Education (ECE) funding attached to them so that the family chooses what ECE service the child attends. Maybe developmental and behavioural interventions could be similar? Looking for the underlying cause of the developmental and behavioural challenges has been a passion for this researcher. Some parents are clearly saying that they believe that what is on offer through 'the system' does not work for their child. They want to be able to include interventions such as RMT into their children's programme. As a society we need to support them the best way we can and through further research, maybe offer a better range of effective interventions.

Appendices

Appendix A: Individual semi-structured interview question schedule

Aim of the project

The aim of the research was to give a voice to parents who have used RMT with their children, with a focus on their perceptions of the investment of time and resources relative to perceived outcomes achieved.

Research question

What are the experiences of parents who have used Rhythmic Movement Training with their child?

To answer the research question, the following supplementary questions were asked:

- What path led the family to RMT?
- How did completing the RMT exercises affect the household routine?
- What changes were noticed in the child's development while they were using RMT?
- Did the actual investment of resources (time and financial) match the anticipated input into RMT?
- Did the effect of RMT match the input of resources?

Sample Questions for Interviews

1 **History/background information**

i. Can you describe your child's educational journey so far?

ii. What do you see as the main challenges for your child?

iii. What challenging life events has your child and your family experienced?

iv. What support have you had for the challenges?

v. What interventions have you tried for the child's challenges?

vi. Why or how did you choose Rhythmic Movement Training?

vii. What do you understand about primitive reflexes?

2 **How did completing the RMT exercises affect the household routine**?
   i. When were the exercises completed?
   ii. How were they completed?
   iii. Did you make any changes in the family routine to fit the exercises into your routine?
   iv. How was the child's behaviour when they were completing the exercises?

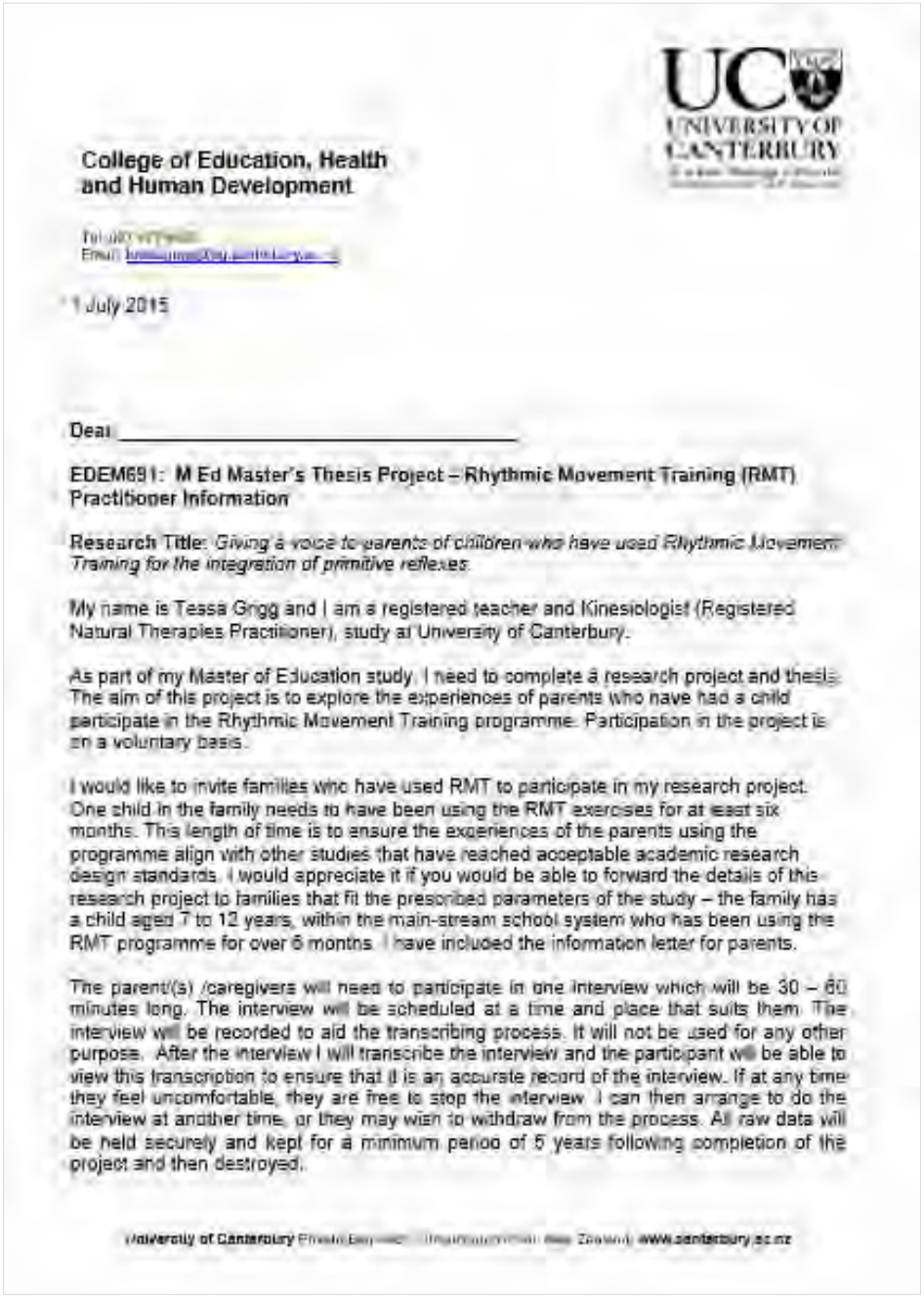
3 What changes were noticed in the child's development while they were using RMT?
   i. Were there any physical developments in your child?
   ii. Were there any language developments in your child?
   iii. Were there any emotional developments in your child?
   iv. Were there and social developments in your child?
   v. Were there any cognitive developments in your child?
   vi. Did anyone else, within or outside the family make comments about your child?

4 **Did the actual investment of resources (time and financial) match the anticipated input into RMT?**
   i. How much time did you spend each day getting your child to complete the exercises?
   ii. Did this amount of time seem reasonable to you? Describe your experience.
   iii. Do you consider the financial commitment matched the outcomes?

5 **Did the effect of RMT match the input of resources?**
   i. In general terms, did the changes in your child match the time, effort and money you invested in them?
   ii. Could anything have been changed to increase your experience with RMT?

Appendix B: RMT practitioner: Letter of information

During the final writing of the findings and discussion of the study, a decision was made to re-visit the title. It was changed to '*The voice of parents who have used Rhythmic Movement Training with their child*'. The revised title reflected more accurately the aim of the study. Information letters and consent forms had already been sent and signed so they are included here in the form they were signed.



UC
UNIVERSITY OF CANTERBURY

College of Education, Health and Human Development

[redacted]

1 July 2015

Dear _____

EDEM691: M Ed Master's Thesis Project – Rhythmic Movement Training (RMT) Practitioner Information

Research Title: *Giving a voice to parents of children who have used Rhythmic Movement Training for the integration of primitive reflexes*

My name is Tessa Grigg and I am a registered teacher and Kinesiologist (Registered Natural Therapies Practitioner), study at University of Canterbury.

As part of my Master of Education study, I need to complete a research project and thesis. The aim of this project is to explore the experiences of parents who have had a child participate in the Rhythmic Movement Training programme. Participation in the project is on a voluntary basis.

I would like to invite families who have used RMT to participate in my research project. One child in the family needs to have been using the RMT exercises for at least six months. This length of time is to ensure the experiences of the parents using the programme align with other studies that have reached acceptable academic research design standards. I would appreciate it if you would be able to forward the details of this research project to families that fit the prescribed parameters of the study – the family has a child aged 7 to 12 years, within the main-stream school system who has been using the RMT programme for over 6 months. I have included the information letter for parents.

The parent(s) /caregivers will need to participate in one interview which will be 30 – 60 minutes long. The interview will be scheduled at a time and place that suits them. The interview will be recorded to aid the transcribing process. It will not be used for any other purpose. After the interview I will transcribe the interview and the participant will be able to view this transcription to ensure that it is an accurate record of the interview. If at any time they feel uncomfortable, they are free to stop the interview. I can then arrange to do the interview at another time, or they may wish to withdraw from the process. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed.

University of Canterbury [redacted] www.canterbury.ac.nz

To add validity to the information gathered, it is hoped that two adults can be interviewed, individually about the programme. This may be the child's parents or caregivers, or any other adult that has regular contact with the child in a caregiving role and was aware that the RMT programme was being used with the child.

The parent (s) /caregivers may choose to provide reports from professional people who have worked with their child, for example school reports, or occupational therapy reports to support their comments about the RMT programme and any outcomes they have noticed. I will not be directly asking any professionals for reports or comments about the child.

The parent (s)/caregivers and the child have the right to withdraw from the project at any time, and can withdraw any information they have provided. For this reason, written consent will be requested from you as the RMT practitioner, parent (s) /caregivers and the child.

To ensure anonymity and confidentiality, all participants will be able to choose a pseudonym. Any identifying information will be stored securely and destroyed once the project has been completed. The results of the project may be published, but identifiable information will not be used. The location of participants will not be published other than to say that the study was completed in New Zealand.

I have attached a consent form for you to complete, if you are willing to approach potential participants. The details for returning the form are included on the form. I have also attached the information and consent forms for parents and children so that you can see what they are being asked to do.

This research is being carried out to fulfil the requirements for my M Ed thesis under the supervision of Dr Wendy Fox-Turnbull (tel: 345 8124 ext 44124 email: wendy.fox-turnbull@canterbury.ac.nz) and Ian Culpan (tel: 03 343 8132 ext 44132 email: ian.culpan@canterbury.ac.nz) from the College of Education, Health and Human Development at University of Canterbury. If you have any concerns or further questions they can be contacted at the College.

This project has received ethical approval from the University of Canterbury Educational Research Human Ethics Committee (ERHEC)

Complaints may be addressed to:
The Chair,
Educational Research Human Ethics Committee
University of Canterbury, Private Bag 4800, CHRISTCHURCH
(human-ethics@canterbury.ac.nz)

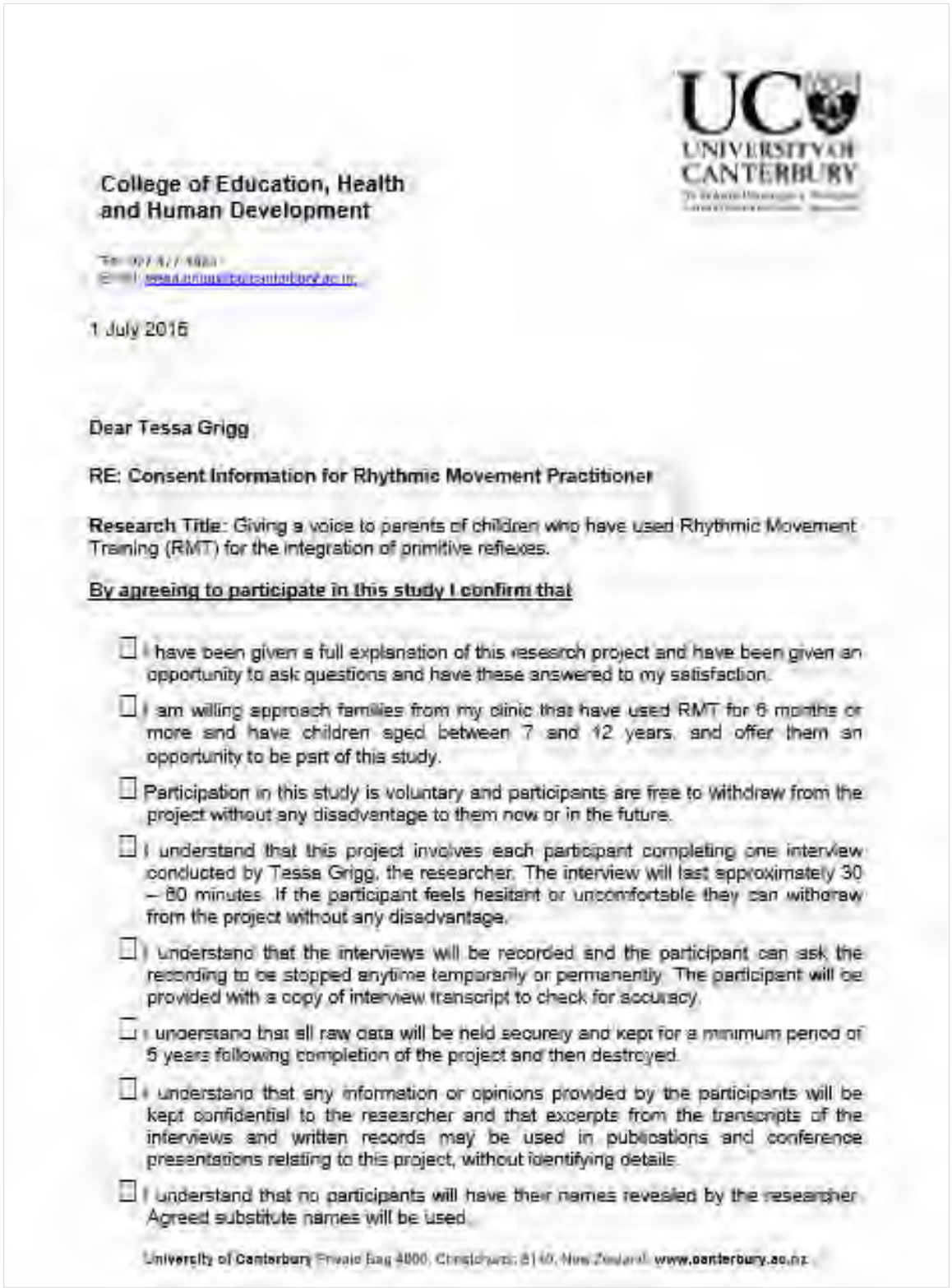
If you have any questions about this project, please do not hesitate to contact me.

Yours sincerely,

Tessa M Grigg,
B Ed, Dip Tch Primary and ECE

University of Canterbury Private Bag 4800, Christchurch 8140, New Zealand. **www.canterbury.ac.nz**

Appendix C: RMT practitioner: Consent form



College of Education, Health and Human Development

UNIVERSITY OF CANTERBURY

1 July 2015

Dear Tessa Grigg

RE: Consent Information for Rhythmic Movement Practitioner

Research Title: Giving a voice to parents of children who have used Rhythmic Movement Training (RMT) for the integration of primitive reflexes.

By agreeing to participate in this study I confirm that

- ☐ I have been given a full explanation of this research project and have been given an opportunity to ask questions and have these answered to my satisfaction.
- ☐ I am willing approach families from my clinic that have used RMT for 6 months or more and have children aged between 7 and 12 years, and offer them an opportunity to be part of this study.
- ☐ Participation in this study is voluntary and participants are free to withdraw from the project without any disadvantage to them now or in the future.
- ☐ I understand that this project involves each participant completing one interview conducted by Tessa Grigg, the researcher. The interview will last approximately 30 – 60 minutes. If the participant feels hesitant or uncomfortable they can withdraw from the project without any disadvantage.
- ☐ I understand that the interviews will be recorded and the participant can ask the recording to be stopped anytime temporarily or permanently. The participant will be provided with a copy of interview transcript to check for accuracy.
- ☐ I understand that all raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed.
- ☐ I understand that any information or opinions provided by the participants will be kept confidential to the researcher and that excerpts from the transcripts of the interviews and written records may be used in publications and conference presentations relating to this project, without identifying details.
- ☐ I understand that no participants will have their names revealed by the researcher. Agreed substitute names will be used.

University of Canterbury Private Bag 4800, Christchurch 8140, New Zealand. www.canterbury.ac.nz

☐ Only Tessa Grigg, as primary researcher, will have access to any personal identifying details of the participants including location, in this study, and these will be destroyed at the completion of the study.

☐ I understand that I will receive a report on the findings of this study and may contact Tessa Grigg at any stage to receive copies of articles or publications based on the study. I have provided my email details below for this.

☐ I understand that if I require further information I can contact the researcher, Tessa Grigg (tessa.grigg@pg.canterbury.ac.nz) or her supervisor, Dr Wendy Fox-Turnbull (wendy.fox-turnbull@canterbury.ac.nz). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Private Bag 4800, Christchurch (humanethics@canterbury.ac.nz).

By signing below, I agree to participate in this research project based on the understandings above.

Name: _____

Signature: _____ Date: _____

Email address: _____

Please post this document to:

Tessa Grigg –Post Graduate Studies
C/o Dr Wendy Fox-Turnbull
College of Education, Health and Human Development
University of Canterbury
Private Bag 4800
Christchurch 8041

Or scan and email to tessa.grigg@pg.canterbury.ac.nz

Appendix D: Parent: Letter of information

College of Education, Health and Human Development

[redacted]

5 August 2016

Dear _____

EDEM691: M Ed Master's Thesis Project – Parent/Caregiver Information

Research Title: *Giving a voice to parents of children who have used Rhythmic Movement Training for the integration of primitive reflexes.*

My name is Tessa Grigg and I am a registered teacher and Kinesiologist (Registered Natural Therapies Practitioner), studying at University of Canterbury.

I would like to invite you and your child to participate in my research project as part of the completion of my Master of Education Thesis. Participation in this project is voluntary.

The aim of this project is to explore the experiences of parents who have had a child participate in the Rhythmic Movement Training programme. Children need to be aged 7 to 12 years. Further information about Rhythmic Movement Training is available at http://www.rhythmicmovement.com/

For the purpose of this research, you will need to participate in one interview which will be 30 – 60 minutes long. The interview with me will be scheduled at a time and place that suits you. The interview will be recorded to aid the transcribing process. It will not be used for any other purpose. After the interview I will transcribe the interview and you will be able to view this transcription to ensure that it is an accurate record of the interview. If at any time you feel uncomfortable, please feel free to stop the interview. We can arrange to do the interview at another time, or you may wish to withdraw from the process. All raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed.

To add validity to the information gathered, it is hoped that two adults in each family can be interviewed, individually about the programme. This may be the child's parents or caregivers, or any other adult that has regular contact with the child in a caregiving role and was aware that the RMT programme was being used with the child.

You may choose to provide reports from professional people who have worked with your child, for example school reports, or occupational therapy reports to support your comments about the RMT programme and any outcomes you have noticed. I will not be

directly asking any professionals for reports or comments about your child. You may also provide samples of work or children's drawings to show developments you have noticed.

You and your child have the right to withdraw from the project at any time, and can withdraw any information you have provided. For this reason, written consent will be requested from you and your child. Once you have indicated your willingness to participate in the study, I will email you a consent form and include one for your child. Details about the return of this form are included on the form.

To ensure anonymity and confidentiality, you will be able to choose a pseudonym for yourself and your child will be able to choose theirs. Any identifying information will be stored securely and destroyed once the project has been completed. The results of the project may be published, but identifiable information will not be used. The location of participants will not be published other than to say that the study was completed in New Zealand.

This research is being carried out to fulfil the requirements for my M Ed thesis under the supervision of Dr Wendy Fox-Turnbull (tel: 345 8124 ext 44124 email: wendy.fox-turnbull@canterbury.ac.nz) and Ian Culpan (tel: 03 343 8132 ext 44132 email: ian.culpan@canterbury.ac.nz) from the College of Education, Health and Human Development at University of Canterbury. If you have any concerns or further questions they can be contacted at the College.

This project has received ethical approval from the University of Canterbury Educational Research Human Ethics Committee (ERHEC)

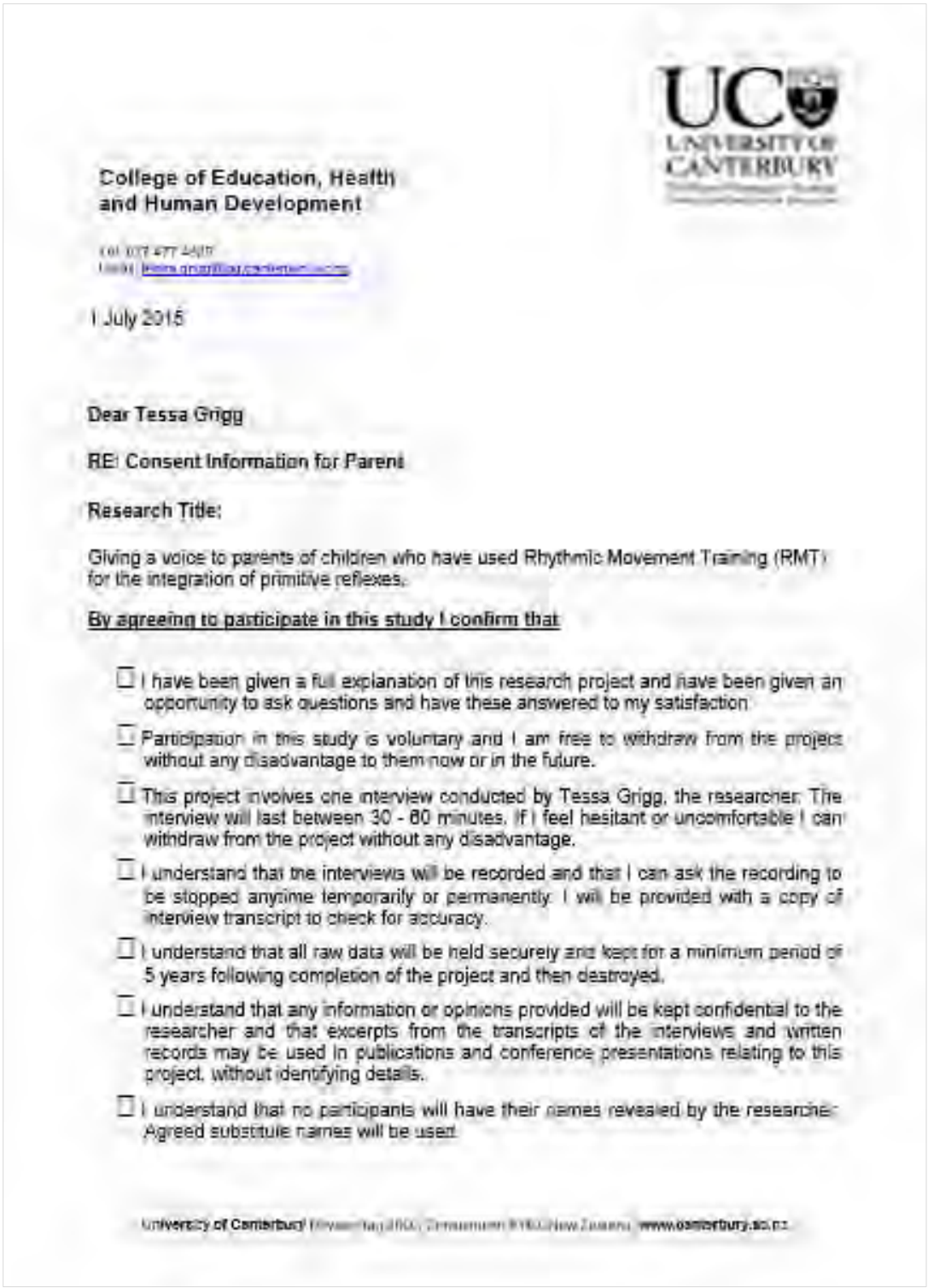
Complaints may be addressed to:
The Chair,
Educational Research Human Ethics Committee
University of Canterbury, Private Bag 4800, CHRISTCHURCH
(human-ethics@canterbury.ac.nz)

If you have any questions about this project, please do not hesitate to contact me.

Yours sincerely,

Tessa M Grigg,
B Ed, Dip Tch Primary and ECE

Appendix E: Parent: Consent form



College of Education, Health and Human Development

[redacted]

1 July 2015

Dear Tessa Grigg

RE: Consent Information for Parent

Research Title:

Giving a voice to parents of children who have used Rhythmic Movement Training (RMT) for the integration of primitive reflexes.

By agreeing to participate in this study I confirm that

- ☐ I have been given a full explanation of this research project and have been given an opportunity to ask questions and have these answered to my satisfaction
- ☐ Participation in this study is voluntary and I am free to withdraw from the project without any disadvantage to them now or in the future.
- ☐ This project involves one interview conducted by Tessa Grigg, the researcher. The interview will last between 30 - 60 minutes. If I feel hesitant or uncomfortable I can withdraw from the project without any disadvantage.
- ☐ I understand that the interviews will be recorded and that I can ask the recording to be stopped anytime temporarily or permanently. I will be provided with a copy of interview transcript to check for accuracy.
- ☐ I understand that all raw data will be held securely and kept for a minimum period of 5 years following completion of the project and then destroyed.
- ☐ I understand that any information or opinions provided will be kept confidential to the researcher and that excerpts from the transcripts of the interviews and written records may be used in publications and conference presentations relating to this project, without identifying details.
- ☐ I understand that no participants will have their names revealed by the researcher. Agreed substitute names will be used.

University of Canterbury [redacted] www.canterbury.ac.nz

☐ Only Tessa Grigg, as primary researcher, will have access to any personal identifying details of the participants including location, in this study, and these will be destroyed at the completion of the study.

☐ I understand that I will receive a report on the findings of this study and may contact Tessa Grigg at any stage to receive copies of articles or publications based on the study. I have provided my email details below for this.

☐ I understand that if I require further information I can contact the researcher, Tessa Grigg (tessa.grigg@pg.canterbury.ac.nz) or her supervisor, Dr Wendy Fox-Turnbull (wendy.fox-turnbull@canterbury.ac.nz). If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Private Bag 4800, Christchurch (humanethics@canterbury.ac.nz).

By signing below, I agree to participate in this research project based on the understandings above.

Name: _____

Signature: _____ Date: _____

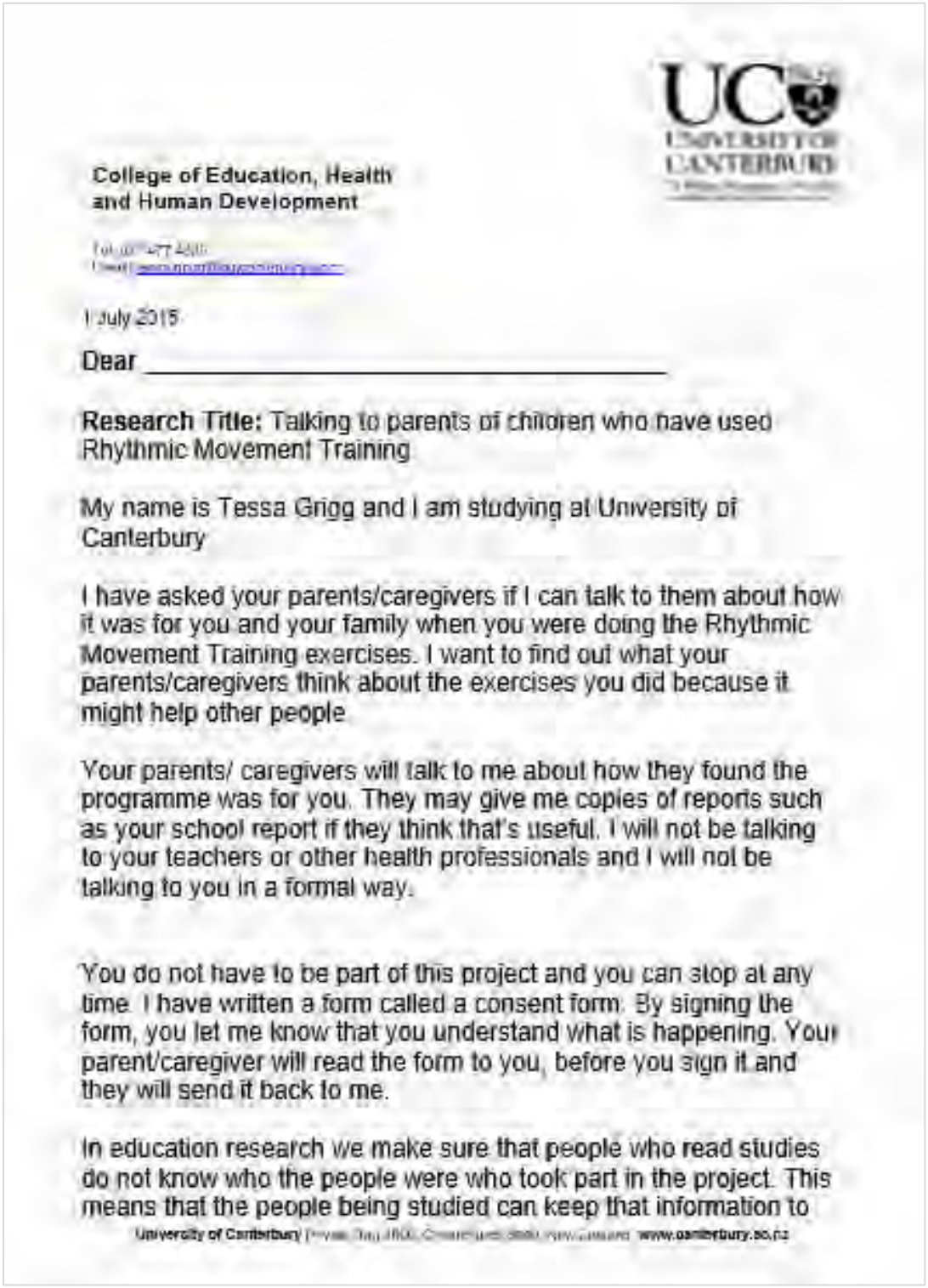
Email address: _____

Please post this document to:

Tessa Grigg –Post Graduate Studies
C/o Dr Wendy Fox Turnbull
College of Education, Health and Human Development
University of Canterbury
Private Bag 4800
Christchurch 8041

Or scan and email to tessa.grigg@pg.canterbury.ac.nz

Appendix F: Child: Letter of information



College of Education, Health and Human Development

1 July 2015

Dear _____

Research Title: Talking to parents of children who have used Rhythmic Movement Training

My name is Tessa Grigg and I am studying at University of Canterbury

I have asked your parents/caregivers if I can talk to them about how it was for you and your family when you were doing the Rhythmic Movement Training exercises. I want to find out what your parents/caregivers think about the exercises you did because it might help other people

Your parents/ caregivers will talk to me about how they found the programme was for you. They may give me copies of reports such as your school report if they think that's useful. I will not be talking to your teachers or other health professionals and I will not be talking to you in a formal way.

You do not have to be part of this project and you can stop at any time. I have written a form called a consent form. By signing the form, you let me know that you understand what is happening. Your parent/caregiver will read the form to you, before you sign it and they will send it back to me.

In education research we make sure that people who read studies do not know who the people were who took part in the project. This means that the people being studied can keep that information to

University of Canterbury www.canterbury.ac.nz

themselves if they want to. So we change the names of people and if you are part of the study you can choose the name that I use for you. I am the only person who will know personal details about you, such as where you live, your real name and the name of your parents/caregivers. I will not be giving this information to anyone else. You can tell people that you have been part of the study if you want to.

I will write a report and you are welcome to read this, or you can talk with me about what I found out by talking to families about RMT.

If you have any questions about this project, you can ask your parents/caregivers, and they can contact me if they need to.

Yours sincerely,

Tessa M Grigg,
B Ed, Dip Tch Primary and ECE

Appendix G: Child: Consent form

College of Education, Health and Human Development

1 July 2015

Dear Tessa

RE: Consent information for Children

Research Title: Talking to parents of children who have used Rhythmic Movement Training.

I agree to be part of this study and I agree with these sentences below:

- ☐ I understand what that my parent(s)/caregiver is/are going to talk to Tessa about the Rhythmic Movement Training exercises I completed.
- ☐ I can stop my parent(s) being part of the project if I want to.
- ☐ I understand that my parent(s)/caregiver will be interviewed and that the interview will be recorded.
- ☐ I understand that recordings or notes will not be shown to anyone else.
- ☐ I understand that the information gathered will be used in a report that describes how parents found using RMT. It will be written in a way that you will not know it is me that is being talked about. I can choose to read a copy of the report or Tessa can talk with me about it.
- ☐ I understand that my real name will not be used and I can choose the name that is used.
- ☐ I understand that my parent(s)/caregiver has/have read about this project and is/are happy to participate.

Name: _____

Signature: _____ Date: _____

Return this form: Please give this form to your parent to return to Tessa Grigg

References

Alesi, M., Bianco, A., Luppina, G., Palma, A., & Pepi, A. (2016). Improving children's coordinative skills and executive functions: The effects of a football exercise program. *Perceptual & Motor Skills, 122*(1), 27-46. doi:10.1177/0031512515627527

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (DSM) IV. 4th. Retrieved from http://www.psychiatry.org/practice/dsm

Arghode, V. (2012). Qualitative and quantitative research: Paradigmatic differences. *Global Education Journal, 2012*(4), 155-163.

Arrowsmith-Young, B. (2016). The Arrowsmith classroom. Retrieved from http://www.arrowsmithschool.org/arrowsmithprogram/implementation.html#pab1_6

Atkinson, P., & Delamont, S. (2008). Analytic perspectives. In N. K. Denzin & Y. S. Lincoln (Eds.), *Collecting and interpreting qualitative materials* (3rd ed., pp. 285 - 312). CA: Sage Publications.

Beijersbergen, M. D., Juffer, F., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2012). Remaining or becoming secure: Parental sensitive support predicts attachment continuity from infancy to adolescence in a longitudinal adoption study. *Developmental Psychology, 48*(5), 1277-1282. doi:10.1037/a0027442

Berne, S. A. (2006). The primitive reflexes: Considerations in the infant. *Optometry & Vision Development, 37*(3), 139-145.

Bishop, D. V. M. (2008). Letters to the Editor (Vol. 44, pp. 520-521): Wiley-Blackwell.

Blacher, J., Baker, B., & Kaladjian, A. (2013). Syndrome specificity and mother-child interactions: Examining positive and negative parenting across contexts and time. *Journal of Autism & Developmental Disorders, 43*(4), 761-774 714p. doi:10.1007/s10803-012-1605-x

Blomberg, H., & Dempsey, M. (2011). *Movements that heal*. Queensland: Book Pal.

Blythe, S. G. (2005). Releasing educational potential through movement: A summary of individual studies carried out using the INPP Test Battery and Developmental Exercise Programme for use in schools with children with special needs. *Child Care in Practice, 11*(4), 415-432. doi:10.1080/13575270500340234

Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education. An introduction to theories and methods* (5th ed.). Boston MA: Pearson Education Inc and Allyn & Bacon.

Bronfenbrenner, U. (1997). Ecological systems theory. In R. Vasta (Ed.), *Six theories of child development: Revised formulations and current issues - New ed* (2nd ed., pp. 187 - 249). London: Jessica Kingsley Publishers Ltd.

Bronfenbrenner, U. (2005). On the nature of bioecological theory and research. In U. Bronfenbrenner (Ed.), *Making human beings human : Bioecological perspectives on human development* (pp. 1-15). Thousand Oaks, CA: Sage Publications.

Brown, C. G. (2010). Improving fine motor skills in young children: An intervention study. *Educational Psychology in Practice*, 269- 279.

Callcott, D. (2012). Retained primary reflexes in pre-primary-aged indigenous children: The effect on movement ability and school readiness. *Australasian Journal of Early Childhood, 37*(2), 132-140.

Capon, J., & Alexander, F. (1975). *Perceptual-motor lesson plans, Level 1: Basic and "practical" lesson plans for perceptual-motor programs in preschool and elementary grades*. CA: Front Row Experience.

Capute, A. J. (1982). Motor functions: Associated primitive reflex profiles. *Developmental Medicine & Child Neurology, 24*(5), 662-669.

Capute, A. J., Palmer, F. B., Shapiro, B. K., Wachtel, R. C., Ross, A., & Accardo, P. J. (1984). Primitive reflex profile: a quantitation of primitive reflexes in infancy. *Developmental medicine and child neurology, 26*(3), 375-383. doi:10.1111/j.1469-8749.1984.tb04456.x

Cicchetti, D., Toth, S. L., & Maughan, A. (2000). An ecological-transactional model of child maltreatment. In A. J. Sameroff, M. Lewis, & S. M. Miller (Eds.), *Handbook of developmental psychopathology* (2nd ed., pp. 689 - 722). New York, NY: Kluwer Academic/ Plenum Publishers.

Coffey, A., & Atkinson, P. (1996). Concepts and coding *Making sense of qualitative data* (pp. 26 - 53). London: Sage.

Cohen, L., Manion, L., & Morrison, K. (2008). *Research methods in education*. London: Routledge.

Cox, L., & Roos, V. (2008). The experiences of first-time mothers with colic infants who seek help from medical professionals. *Health SA Gesondheid, 13*(1), 4-13.

Creswell, J. W. (2013). *Qualitative inquiry & research design - Choosing among five approaches* (3rd ed.). London: SAGE Publications Inc

Damasceno, A., Delicio, A. M., Mazo, D. F. C., Zullo, J. F. D., Scherer, P., Ng, R. T. Y., & Damasceno, B. P. (2005). Primitive reflexes and cognitive function. *Arquivos de Neuro-Psiquiatria, 63*(4), 577-582.

Denzin, N. K., & Lincoln, Y. S. (2011). Introduction: The discipline and practice of qualitative research. In N. K. Denzin (Ed.), *The Sage handbook of qualitative research* (4th ed., pp. 1 - 19). CA: Sage.

Desorbay, T. (2013). A neuro-developmental approach to specific learning difficulties. *International Journal of Nutrition, Pharmacology, Neurological Diseases, 3*(1), 1-2. doi:10.4103/2231-0738.106970

Diamond, A. (2000). Close interrelation of motor development and cognitive development and of the cerebellum and prefrontal cortex. *Child Development, 71*(1), 44.

Diamond, A. (2007). Interrelated and interdependent. *Developmental Science, 10*(1), 152-158. doi:10.1111/j.1467-7687.2007.00578.x

Dobie, S. M., Brown, K., & Dalziell, A. (2002). *Bilateral integration: The gateway to achievement*. Kinross: Bilateral Exercise Integration

Dockett, S., Einarsdóttir, J., & Perry, B. (2012). Young children's decisions about research participation: opting out. *International Journal of Early Years Education, 20*(3), 244-256. doi:10.1080/09669760.2012.715405

Doman, G., Doman, D., & Hagy, B. (1988). *How to teach your baby to be physically superb*. Philadelphia: The Better Baby Press.

Dynevor CIC. (2014). Dore. Retrieved from http://www.dore.co.uk/contact/about-us/

ERHEC. (2009). *Education research human ethics committee - Principles and guidelines*. Christchurch: University of Canterbury.

Esdaile, S. A. (2009). Valuing difference: caregiving by mothers of children with disabilities. *Occupational Therapy International, 16*(2), 122-133. doi:10.1002/oti.274

Esteban-Cornejo, I., Tejero-González, C., Martinez-Gomez, D., Cabanas-Sánchez, V., Fernández-Santos, J., Conde-Caveda, J., . . . Veiga, O. L. (2014). Objectively measured physical activity has a negative but weak association with academic performance in children and adolescents. *Acta Paediatrica, 103*(11), e501-e506. doi:10.1111/apa.12757

Goddard-Blythe, S. (2000). Early learning in the balance: Priming the first ABC. *Support for Learning*, 15(14), 154 -158.

Goddard-Blythe, S. (2008). *What babies and children really need*. Stroud, Gloucertershire: Hawthron Press.

Goddard-Blythe, S. (2012). *Assessing neuromotor readiness for learning: The INPP developmental screening test and school intervention programme*. West Sussex: John Wiley and Sons Ltd.

Goddard, S. (1996). *A teacher's window into the child's mind*. Eugene, OR: Fern Ridge Press.

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage.

Haapala, E. A. (2013). Cardiorespiratory Fitness and Motor Skills in Relation to Cognition and Academic Performance in Children -- A Review. *Journal of Human Kinetics, 37*, 55-68.

Harcourt, D., & Conroy, H. (2005). Informed assent: ethics and processes when researching with young children. *Early Child Development and Care, 175*(6), 567-577. doi:10.1080/03004430500131353

Harris, M. (2008). The effects of music instruction on learning in the Montessori classroom. *Montessori Life, 20*(3), 24-31.

Hendrickson, S., Baldwin, J. H., & Allred, K. W. (2000). Factors perceived by mothers as preventing families from obtaining early intervention services for their children with special needs. *Children's Health Care, 29*(1), 1-17 17p.

Hillman, C. H., Erickson, K. I., & Kramer, A. F. (2008). Be smart, exercise your heart: exercise effects on brain and cognition. *Nature Reviews Neuroscience, 9*(1), 58-65. doi:10.1038/nrn2298

Hobo, K., Kawase, J., Tamura, F., Groher, M., Kikutani, T., & Sunakawa, H. (2014). Effects of the reappearance of primitive reflexes on eating function and prognosis. *Geriatrics & Gerontology International, 14*(1), 190-197. doi:10.1111/ggi.12078

Holley, P. A. (2010). *Why do some learn more easily than others? What physical factors influence effective learning?* (Master of Education), University of Melbourne, Melbourne. Australian Education Index database.

Hsieh, C.-J., Jeng, S.-F., Wu, K.-Y., Su, Y.-N., Liao, H.-F., Hsieh, W.-S., & Chen, P.-C. (2011). GSTM1 modifies the effect of maternal exposure to environmental tobacco smoke on neonatal primitive reflexes. *Nicotine & Tobacco Research, 13*(11), 1114-1122.

Jordan-Black, J.-A. (2005). The effects of the Primary Movement programme on the academic performance of children attending ordinary primary school. *Journal of Research in Special Educational Needs, 5*(3), 101-111. doi:10.1111/j.1471-3802.2005.00049.x

Koh, M.-s., Shin, S., & Yeo, M.-H. (2010). The Learning Program for the Development of Autistic Children (LPDAC): Parents' perspectives on the treatment outcomes. *Journal of the International Association of Special Education, 11*(1), 92-100.

Konicarova, J., & Bob, P. (2012). Retained primitive reflexes and ADHD in children. *Activitas Nervosa Superior, 54*(3-4), 134-137.

Konicarova, J., & Bob, P. (2013). Principle of dissolution and primitive reflexes in ADHD. *Activitas Nervosa Superior, 55*(1/2), 74-78.

Lense, M., & Dykens, E. (2013). Musical learning in children and adults with Williams syndrome. *Journal of Intellectual Disability Research, 57*(9), 850-860. doi:10.1111/j.1365-2788.2012.01611.x

Mather, N., & Morris, R. J. (2008). *Evidence-based interventions for students with learning and behavioural challenges*. New York, NY: Routledge.

Mather, N., & Urso, A. (2008). Teaching young readers with reading difficulties *Evidence based interventions of students with learning and behavioural challenges* (pp. 163 - 192). New York, NY: Routledge.

Mathur, A., Duda, L., & Kamat, D. M. (2008). Knowledge and use of music therapy among pediatric practitioners in Michigan. *Clinical Pediatrics, 47*(2), 155-159. doi:10.1177/0009922807306777

McPhillips, M. (2003). A commentary on an article published in the february 2003 edition of 'Dyslexia', 'evaluation of an exercise-based treatment for children with reading difficulties' (Reynolds, Nicolson, and Hambly). *Dyslexia (10769242), 9*(3), 161-163. doi:10.1002/dys.259

McPhillips, M. (2013). *Training requirements for primary movement programme*. Retrieved from Primary Movement website http://www.primarymovement.org/training/foundation.html:

McPhillips, M. (2014). Primary Movement Retrieved from http://primarymovement.org/about/index.html

McPhillips, M., & Jordan-Black, J.-A. (2007a). The effect of social disadvantage on motor development in young children: A comparative study. *Journal of Child Psychology & Psychiatry, 48*(12), 1214-1222. doi:10.1111/j.1469-7610.2007.01814.x

McPhillips, M., & Jordan-Black, J.-A. (2007b). Primary reflex persistence in children with reading difficulties (dyslexia): A cross-sectional study. *Neuropsychologia, 45*(4), 748-754. doi:10.1016/j.neuropsychologia.2006.08.005

McPhillips, M., & Sheehy, N. (2004). Prevalence of persistent primary reflexes and motor problems in children with reading difficulties. *Dyslexia, 10*(4), 316-338.

Mortari, L., & Harcourt, D. (2012). 'Living' ethical dilemmas for researchers when researching with children. *International Journal of Early Years Education, 20*(3), 234-243. doi:10.1080/09669760.2012.715409

Moustakas, C. (1994). *Phenomenological research methods.* Thousand Oaks, CA: SAGE Publications, Inc.

Mullender-Wijnsma, M. J., Hartman, E., de Greeff, J. W., Doolaard, S., Bosker, R. J., & Visscher, C. (2016). Physically Active Math and Language Lessons Improve Academic Achievement: A Cluster Randomized Controlled Trial. *Pediatrics, 137*(3), 42-42. doi:10.1542/peds.2015-2743

Murray, B. (2006). *James' Gift: The story of an Asperger family*. Wellington: First Edition Ltd.

Mutch, C. (2005). *Doing Educational Research. A practitioner's guide to getting started.* Wellington: New Zealand Council for Educational Research (NZCER) Press.

Onwuegbuzie, A. J., Collins, K. M. T., & Frels, R. K. (2013). Foreword: Using Bronfenbrenner's ecological systems theory to frame quantitative, qualitative, and mixed research. *International Journal of Multiple Research Approaches, 7*(1), 2 - 8.

Pace, C. S., & Zavattini, G. C. (2011). 'Adoption and attachment theory' the attachment models of adoptive mothers and the revision of attachment patterns of their late-adopted children. *Child: Care, Health & Development, 37*(1), 82-88. doi:10.1111/j.1365-2214.2010.01135.x

Paige-Smith, A., & Rix, J. (2006). Parents' perceptions and children's experiences of early intervention. Inclusive practice? *Journal of Research in Special Educational Needs, 6*(2), 92-98.

Pedersen, D. E. (2012). The good mother, the good father, and the good parent: Gendered definitions of parenting. *Journal of Feminist Family Therapy, 24*(3), 230-246. doi:10.1080/08952833.2012.648141

Piek, J. P., Dawson, L., Smith, L. M., & Gasson, N. (2008). The role of early fine and gross motor development on later motor and cognitive ability. *Human Movement Science, 27*(5), 668-681. doi:http://dx.doi.org/10.1016/j.humov.2007.11.002

Reynolds, D., & Nicolson, R. I. (2007). Follow-up of an exercise-based treatment for children with reading difficulties. *Dyslexia (10769242), 13*(2), 78-96. doi:10.1002/dys.331

Reynolds, D., Nicolson, R. I., & Hambly, H. (2003). Evaluation of an exercise-based treatment for children with reading difficulties. *Dyslexia (10769242), 9*(1), 48-71. doi:10.1002/dys.235

Richards, I. L., Moores, E., Witton, C., Reddy, P. A., Rippon, G., Rochelle, K. S. H., & Talcott, J. B. (2003). Science, sophistry and 'commercial sensitivity': Comments on 'evaluation of an exercise-based treatment for children with reading difficulties', by Reynolds, Nicolson and Hambly. *Dyslexia (10769242), 9*(3), 146-150. doi:10.1002/dys.258

Richardson, L., & Adams St Pierre, E. (2008). Writing - A method of inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Collecting and interpreting qualitative materials* (3rd ed., pp. 473 - 500). CA: Sage.

Sassé, M. (2009). *Smart start: How exercise can transform your child's life*. Wollombi, NSW: Exisle Publishing

Sibley, B. A., & Etnier, J. L. (2003). The relationship between physical activity and cognition in children: A meta-analysis. *Pediatric Exercise Science, 15*(3), 243.

Singleton, C., & Stuart, M. (2003). Measurement mischief: A critique of Reynolds, Nicolson and Hambly (2003). *Dyslexia: An International Journal of Research and Practice, 9*(3), 151-160.

Snape, D., & Spencer, L. (2003). The foundations of qualitative research. In J. Ritchie & J. Lewis (Eds.), *Qualitative research practice* (pp. 1 -19). London: Sage Publications.

Snook, I. (2003). *The ethical teacher*. Palmerston North: Dunmore Press.

Taylor, M., Houghton, S., & Chapman, E. (2004). Primitive reflexes and attention-deficit/hyperactivity disorder: Developmental origins of classroom dysfunction. *International Journal of Special Education, 19*(1), 23-37.

Tolich, M., & Davidson, C. (1999). *Starting fieldwork: An introduction to qualitative research in New Zealand*. Melbourne, Aus: Oxford University Press.

Tomasello, N. M., Manning, A. R., & Dulmus, C. N. (2010). Family-centered early intervention for infants and toddlers with disabilities. *Journal of Family Social Work, 13*(2), 163-172.

Tomporowski, P. D., Davis, C. L., Miller, P. H., & Naglieri, J. A. (2008). Exercise and children's intelligence, cognition, and academic achievement. *Educational Psychology Review, 20*(2), 111-131.

van der Niet, A. G., Smith, J., Oosterlaan, J., Scherder, E. J. A., Hartman, E., & Visscher, C. (2016). Effects of a cognitively demanding aerobic intervention during recess on children's physical fitness and executive functioning. *Pediatric Exercise Science, 28*(1), 64-70.

van Manen, M. (1997). *Researching lived experience : human science for an action sensitive pedagogy* (2 ed.). Ontario: The Althouse Press.

Williams, J. (2005). *Learning from mothers: How myths, policies and practices affect the early detection of subtle developmental problems in children.* (PhD), James Cook University, Townsville.

Williams, J. (2015). Does a neurodevelopmental movement program affect Australian children's academic performance? Unlocking Potential: a report. *Australian Journal of Child and Family Health Nursing, 2*(12), 12 - 18.

Worcester, J. A., Nesman, T. M., Mendez, L. M. R., & Keller, H. R. (2008). Giving voice to parents of young children with challenging behavior. *Exceptional Children, 74*(4), 509-525.

Yin, R. (2011). *Qualitative research from start to finish*. London: The Guilford Press.