

Retained Primitive Reflexes: The Influences Of Rhythmic Movement Training (RMT) In The Classroom – Preliminary Results From One Student

Tessa M Grigg, University of Canterbury, New Zealand
Ian G Culpan, University of Canterbury, New Zealand
Wendy H Fox-Turnbull, University of Waikato, New Zealand

ABSTRACT

This research investigates the influences of Rhythmic Movement Training (RMT) on student achievement and behavioural outcomes, with teacher and parent perspectives included in the analysis. The individualised movement programme comprises passive, active and isometric exercises and is designed to integrate retained primitive reflexes within the brain. There is anecdotal evidence that RMT can make significant differences for children both academically and behaviourally. The research presented in this paper describes the mixed methods study that was completed and details the preliminary results of one child from the group of participants. Orla was 6.5 years old at the beginning of the study and had been identified as having learning challenges. Her progress after RMT was introduced was commented on by her teacher and the specialist teachers who worked with her. The quasi-experimental nature of classroom-based research means that it is not clear exactly how the changes in her progress were made, as there were other interventions taking place at the same time. However, it has been noted that there was an increase in the rate of change once she started the exercises.

Keywords: Children; Primitive Reflexes; Rhythmic Movement Training (RMT); Learning and Behaviour; Mixed Methods Research

INTRODUCTION

This paper is an overview of a research project that assessed a reflex integration programme. It gives some background information about retained primitive reflexes and summarises of associated literature. It describes the research questions posed and the study of the use of a reflex integration programme, the processes used and gives the preliminary finding of one student. Primitive reflexes have been identified as a possible cause for learning and behavioural challenges (Gieysztor, Choińska, & Paprocka-Borowicz, 2018), and as the intervention used in the research, Rhythmic Movement Training (RMT) is a programme designed to focus on helping the body integrate primitive reflexes, using RMT with students would appear to be a good use of student and teacher time. There is also a possibility that it could be used to support other remedial programmes.

The research question of this study investigated the influence RMT has on student achievement or behavioural outcomes. There are many children who find learning a challenge and while there are some successful remedial learning programmes, it is possible that more children with learning challenges could be identified at an early stage thus giving them a better chance to succeed at school. Two Year One teachers in New Zealand had been gradually implementing some ideas based on reflex integration with the children in their classrooms and were excited about the results the children were achieving. Their process had been informal, however based on their experience this rigorous research project was developed.

Research using a broad-based movement programme has shown positive results (Williams, 2015). Williams stated that her research data showed that completion of the exercises three to five times a day for 10 to 12 months resulted

in significant gains in terms of positive learning outcomes for students. However, this programme required approximately 30 minutes to complete each session. RMT sessions take 5 minutes to complete and no additional equipment is required. This research is based on the knowledge that each school day is already overloaded with expectations, and while movement has been shown to make positive changes for children, could it be possible that a small amount of specifically targeted exercises would have positive student achievement and behavioural outcomes? The simplicity of the movement-based RMT programme provides potential for it to occur on a daily basis in line with the Williams research.

Often in education there appears to be a significant focus on symptoms rather than the cause when it comes to learning and behavioural challenges. The focus is often on the skill deficit that is presenting. A teacher will have the child who cannot read or write practice more or give the child with auditory processing issues a sound system. But with reflex integration the issues behind the problems are in focus (Goddard-Blythe, 2012).

Background Information

It is possible that some of the children who do not respond well to conventional school-based interventions may have significant levels of retained primitive reflexes. Study in this area has been limited and more is needed to provide evidence of this and point to the benefits of programmes that target the integration of primitive reflexes. The individual nature of the retained reflex issue has also not been addressed in those studies completed to-date, and while there appear to be clusters of reflexes that are retained, and commonalities of challenges experienced, each child's reflex story is an individual one. It appears that the primitive reflex integration process is not fully understood, and what seems to work for some children does not work for others. This research is attempting to add to what we understand about what works, but why and how RMT works is not being addressed.

Primitive Reflexes: "Primitive reflexes (also known as primary reflexes or infant reflexes) develop before birth, are activated during the birthing process and are useful 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)" (Grigg, 2016, p. 4). As examples, the Moro or startle reflex is activated when the infant is surprised, and the Spinal Galant reflex facilitates the emptying of an infant's immature bladder. The primitive reflexes integrate as part of the maturation process, with movement and intellect becoming controlled by cognition or postural reflexes. (Goddard-Blythe, 2008).

Retained Primitive Reflexes: The reflex/cognitive integration process can be interrupted for some children with primitive reflexes persisting beyond their expected duration. In normally developing children, the primitive reflexes become inhibited or are transformed within the first 12 months of life (McPhillips & Sheehy, 2004). The interrupters of the primitive reflex integration process appear to be related to maternal and/or environmental stress or birth complications (Blomberg & Dempsey, 2011; Goddard-Blythe, 2000; Holley, 2010; Hsieh et al., 2011). Learning and behavioural issues have been associated with retained reflexes (Gieysztor et al., 2018; Konicarova & Bob, 2012; McPhillips & Jordan-Black, 2007b). For example, balance difficulties can be based in a retained Moro reflex and bedwetting in older children can be the result of a retained Spinal Galant reflex (Berne, 2006).

Rhythmic Movement Training (RMT) as an Intervention

This series of movements has been designed by Blomberg and Dempsey using the work of Linde (Blomberg & Dempsey, 2011). The movements are based on the spontaneous movements of normally-developing infants following their birth. The rhythmic aspect of RMT sets this integration programme apart from alternative movement programmes where exercises are completed without rhythm being incorporated. Physical tests have been developed to assess the child's primitive reflex status (Goddard, 1996). One or two individualised RMT exercises are given to children for completion each day. The time involved to complete the exercises is approximately 5 to 10 minutes each day, and requires no equipment (Blomberg & Dempsey, 2011). The Rhythmic Movement Training (RMT) described by Blomberg (2011) appears have high levels of completion by children and could fit easily within busy teacher routines.

LITERATURE REVIEW

Two areas are covered by this literature review. Firstly, retained primitive reflexes and their influence on academic achievement and behavioural outcomes are discussed, and offers information as to why research attempting to resolve retained primitive reflexes is relevant within education. Secondly, programmes designed to assist the resolution of retained primitive reflexes are discussed, highlighting which programmes have attracted empirical research and are used with children.

Effects of and Possible Solutions to Retained Primitive Reflexes

Literature investigating the issue of retained primitive reflexes continues to grow. Educational and behavioural outcomes have been in focus, in particular the effect retained primitive reflexes play in the development of the child (Callcott, 2012; Goddard-Blythe, 2005; Konicarova & Bob, 2012; McPhillips, 2013; McPhillips & Sheehy, 2004; Taylor, Houghton, & Chapman, 2004). A solution Goddard-Blythe and others found is movement-based programmes designed to facilitate the integration of primitive reflexes (Brown, 2010; Dobie, Brown, & Dalziell, 2002; Goddard, 1996; Jordan-Black, 2005). A positive effect on the integration of primitive reflexes has been demonstrated through the use of movement-based programmes, although the investment of both time and financial resources can be significant for schools.

Since 2000, key retained primitive reflex researchers have been Goddard-Blythe, McPhillips, and Jordan-Black. Irish studies (Livingstone & McPhillips, 2014; McPhillips & Jordan-Black, 2007a, 2007b; McPhillips & Sheehy, 2004) have established links between the retention of the Asymmetric Tonic Neck Reflex (ATNR) and poor learning outcomes in ordinary primary schools. Konicarova and Bob (2012) found that a group of European children with ADHD (diagnosed in accordance with the DSM-IV criteria (American Psychiatric Association, 1994)) also displayed elevated levels of Moro and Spinal Galant reflex retention. These studies support the link between retained primitive reflexes and children's educational and behavioural challenges.

Programmes to Address Retained Primitive Reflexes

There are two programmes most commonly used with the integration of retained primitive reflexes. Primary Movement Programme (McPhillips, 2014) and the Institute of Neuro-Physiological Psychology (INPP) Programme (Goddard, 1996) have empirical research associated with them and they are used in European and United Kingdom schools. Studies supporting their use have been reported (Brown, 2010; Callcott, 2012; Goddard-Blythe, 2012; Jordan-Black, 2005; McPhillips & Jordan-Black, 2007b; Taylor et al., 2004), and evidence suggests that these movement-based programmes influence the learning issues (reading, fine-motor skills and maths) targeted in the studies. Although the studies mentioned above were classroom-based, both programmes can be used individually. Early infant movements form the basis of both programmes. Blythe (2005) noted that retained primitive reflexes could be found in 48% of all children, while Gieysztor et al (2018) found that 65% four to six year-olds tested, had some level of retained primitive reflexes and 38% of those children experienced some level of developmental delay.

The RMT Programme

Extensive review of relevant literature indicated that RMT does not appear to be the basis of any peer-reviewed studies. However, as discussed above, retained primitive reflex programmes have been researched (Goddard, 1996; McPhillips, Hepper, & Mulhern, 2000). The rhythmic aspect of RMT differentiates it from other programmes and is supported by studies such as Harris's (2008) research investigating links between music and the brain. It was found that music effected the brain positively. The body of anecdotal support for RMT and the ease of use indicate that assessing the effectiveness of the programme in a robust manner may be useful for many children and practitioners.

School-based Exercise Programme Research

Research over the last ten years relating to movement programmes used in schools has strongly criticised their inclusion in the school programme (Lense & Dykens, 2013; Mathur, Duda, & Kamat, 2008; Stephenson, Carter, & Wheldall, 2007) An Australian study of Perceptual Motor Programme (PMP) (Stephenson et al., 2007) reported that

there was no evidence that movement programmes improved academic abilities in children who had participated in them. The amount of time devoted to the programme each week was provided for 11 out of the 117 school websites and it varied from once a week to three times a week.

However, Australian research completed by Williams (2015) gathered quantitative data from 314 children in several Australian states using the Draw-A-Person (DAP) assessment tool. The children completed a 30-minute movement programme three to five times per week for 10 to 12 months. Results showed that children's neurological maturity increased 22 months when on the programme compared to the control group who managed a six-month increase. The decline in the control group's progress over the 10 months was not expected and could not be explained. Williams stated that children are expected to increase their neurological maturity along with their chronological age. Also puzzling was that when measured pre-intervention both groups had neurological age that was within a month of their chronological age. No conclusion was reached. However, in the intervention groups teachers commented on the improved behaviour in the classroom of the children participating in the movement programme.

South African research (Erasmus, Janse van Rensburg, Pienaar, & Ellis, 2016) has also focused on a movement-based programme. Forty-eight children from low socioeconomic schools, 27 children in the control group and 21 in the intervention group, were tested for a range of perceptual motor skills and the DAP test. A perceptual motor programme (PMP) was used three to five days a week as the intervention. They found significantly increased school readiness after 10 weeks, 33.3% for the intervention group compared with 14.8% for the control group. This mixed methods study also interviewed teachers, asking them about changes they had noticed in the children's skills and behaviour in the classroom. The themes that emerged were: longer and better concentration, improved ability to execute tasks and improved gross and fine motor co-ordination.

These recent movement-based studies resonate with the research questions in this study. The South African mixed methods study gathered a wider range of data than is proposed in this study, but it did not gather social (interactions with peers) or emotional (self-regulation, resilience) skill data. The Australian study only gathered DAP and academic data with quantitative findings. Both studies devoted approximately 30 minutes of classroom time, three to five times a week, to their interventions. For this current study, the range of data – academic, DAP and social and emotional - sets it apart from previous studies. The RMT intervention is daily, but the time commitment – five minutes – is shorter than the other two programmes.

METHODOLOGY

This research used RMT as an intervention and investigated its possible influences on student achievement and behavioural outcomes. Four theories helped formulate the research question and the design. Bronfenbrenner's bioecological theory, 'process-person-context-time' (Bronfenbrenner, 2005; Rosa & Tudge, 2013) gave importance to the classroom setting and the teacher's role in relation to the child's development. He also highlighted the complexity of the systems a child relates to and qualitative data allowed those complexities to be investigated. Thelen's movement theories (1981) and the links between movement and development supported the use of a movement-based intervention to encourage development. She documented the seemingly important movements infants make after birth and the noted the influences these movements appeared to have on development. The development of RMT was based on the movements made by infants (Blomberg, 2015) aligning it with Thelen's work. Hughlings-Jackson's (Franz & Gillett, 2011) theories about primitive reflex retention and their influence on development supported the use of a reflex integration programme to assist development. He believed that when primitive reflexes are retained into childhood, there are associated behavioural challenges such as Attention Deficit Hyperactivity Disorder (ADHD) (Konicarova & Bob, 2013). Finally Vygotsky's theory(1978) suggesting the importance of social interactions in the development of a child, were used to support the gathering of social and emotional data. The complexity of children's development is acknowledged and using this range of theorists to underpin the research attempts to address this.