

Special Children

Meeting Children's Additional Educational Needs

- How technology can help with MFL
- Action research and working memory
- High quality teaching and inclusion
- Enabling Gypsy Roma children to flourish



Developing physical reflexes

Retained baby reflexes may be holding some children back

PULL-OUT RESOURCES
Drama-based activities for pupils with autism



Physical development and learning difference

Mary Mountstephen outlines a research project to explore the impact of an inclusive floor-based movement programme on classroom performance in EYFS and primary schools

The early years in school are a critical period for establishing the foundations of learning. However, an increasing number of children entering school are causing concern in terms of their learning readiness and classroom behaviour.

Why isn't Finn doing better?

At seven, Finn is struggling to concentrate in class and produces poorly organised and presented written work using an awkward pencil grasp. He is growing increasingly frustrated and emotional, both at home and in class.

His teacher has provided a pencil grip to help with his writing and a guide to help him keep his place when reading, but progress remains slow.

He presents as a child of average ability whose attainment is not in line with perceptions of his potential. He is well supported at home by busy, working

parents and has a younger sister who is performing to expectations. There are no obvious reasons for his failure to thrive: his eyesight has been tested and there are no concerns about his hearing.

So why might children like Finn have difficulties with focus, expressive and receptive language, fine motor skills and self-help skills? Can it all be blamed on modern life styles, busy parents and an over-reliance on technology, or are there also less obvious contributory factors?

Looking at Finn's profile from a developmental perspective, it could be that part of the explanation lies in his physical abilities. He may be a child whose early physical development was compromised by birth trauma, or perhaps limited exposure to early movement experiences has contributed to immature fine motor skills and poor visual performance. Although his eyesight tests indicated no difficulties, it is still possible that his eyes are not working

well together and that tracking and convergence issues are present.

The connection between movement and development

A new book by Anne O'Connor and Anna Daly, *Understanding Physical Development in the Early Years* (see *Find out more*), provides a useful guide to different aspects of physical development. The authors highlight the significance of early 'physical literacy' in providing firm foundations for classroom performance. They draw on the work of recognised experts in this field, such as Sally Goddard-Blythe (Institute for Neuro-Physiological Psychology).

The same message is put forward in another excellent book – entitled *Encouraging Physical Development Through Movement-play* by Carol Archer and Iram Siraj – which summarises the influence of movement on a child's

neurological system, learning and development. The authors explain in an accessible way how early movement experiences such as crawling, rolling and tummy time contribute significantly to learning readiness. These deceptively simple movement patterns support the development of skills such as visual tracking, motor control, postural development and efficient coordination.

They say: 'Young children's future achievements are dependent on their movement experiences from the time they are born... The brain's structure is connected to young children's inner body mechanisms, driving movements that ultimately restructure the architecture of the brain.'

So when parents avoid tummy time because the child cries (it is very hard work) and put their infant into a baby walker to provide stimulation, they do so with the best of intentions, but are potentially undermining the child's need to develop floor-based competence. This means that if Finn has, for whatever reason, missed out on regular floor-time activities and did not pass through a crawling stage, these aspects of his profile may remain immature and potentially compromise his potential.

Fortunately, these movement patterns can be revisited as part of a school intervention programme and, as a result, children often become more able to meet expectations, are less frustrated and more emotionally resilient as frustrations decrease. Thus specific exercises can provide a second window of opportunity to develop postural stability and control.

Exploring these issues further

In the interests of research, I have embarked on a project to investigate in what ways and to what extent targeted physical programmes contribute to improvements in classroom performance for children with learning differences/delays in EYFS and primary schools.

Learning difficulties that might stem, in part, from physical developmental issues include weaknesses in acquiring reading skills, poor concentration, and weak fine and gross motor skills. Other possible signs of immature physical development could be:

- difficulty catching a ball
- difficulty with balance and the control of slow, precise gross motor skills
- poor pencil control and letter formation
- difficulty tracking text when reading
- difficulty sitting still or with attention
- academic underachievement.

The questions driving my research include the following.



Floor-based exercises help children develop a better awareness of where their body is in space

- Is it possible that some physical programmes can exert measurable impact on classroom performance?
- To what extent can certain pupils improve functioning in specific areas?
- Can children acquire the skills to cope with more complex processes without the need for extra resources in school?
- Is it possible that daily sessions devoted to physical aspects of development can improve some pupils' cognitive motor development, thus minimising potential reliance on other external interventions?
- Is there an inclusive approach where children can learn to focus inwards on the quality and speed of their movement and become more aware of posture, balance and body awareness?
- Will this then be reflected in improved classroom performance?

“ **The brain's structure is connected to young children's inner body mechanisms** ”

Choosing the right resource

A number of movement programmes have been promoted over the years, and it is difficult for schools to make informed choices. It is important that the intervention is not only of benefit to children like Finn, but also supports the teacher to identify other pupils who might not be reaching their potential due to their own developmental immaturities.

For this reason, I settled on the Ten Gems for the Brain movements, developed by the Australian company Move to Learn and used by schools

internationally for over 20 years. The programme is designed to address the needs of children with learning differences; however, as a more general screening and intervention programme it is, I believe, a potentially powerful resource for teachers.

It is important to note that this type of intervention is not intended to replace more conventional approaches for learning differences; rather it acts as an additional tool in the teacher's toolbox.

Move to Learn provides one-day training courses for teachers, professionals and parents. The course outlines the theory and history behind the approach and a manual details the structure of the exercises.

Devised and developed by a specialist teacher and occupational therapist, the programme 'begins at the beginning', replicating the movements of an infant in the first year of life. The aim is to develop children's primitive reflexes by getting them to practise early movements in a structured, systematic and sequential way on a daily basis as a whole-class activity. It is intended to be a low-cost, whole-class approach and integrated into the school's normal routines.

Meanwhile, the activities offered by Anne O'Connor and Anna Daly in *Understanding Physical Development in the Early Years* provide another good starting point, and the authors present a clear rationale for their daily inclusion in the classroom.

The rationale behind such programmes

According to Elnora Gilfoyle et al in the book *Children Adapt*: 'Skilled movements are acquired through developmental and purposeful sequences... adapting posture and movement strategies to developmental sequences... new behaviours are higher level modifications of older, lower level behaviours.'

Reading and writing are executive functions that depend on developmentally mature sensory systems. Physical interventions can therefore help the child develop a greater awareness of proprioception: the reception of information received from the body and positional feedback. In this way, they provide the means to build or rebuild the child's perception of spatial awareness and timing that are necessary to access learning more effectively.

The classroom dilemma

Of course, the dilemma for teachers is whether to provide short-term solutions



Children develop their reflexes by replicating the movements of infants in the first year of life

using technology and occupational therapy approaches such as slanted boards, software and wobble cushions to address the symptoms, or to adopt a long-term physical approach alongside these accommodations to address the underlying causes.

If both approaches are adopted simultaneously, Finn's classroom performance will be supported while his physical systems are being retrained. The question is whether teachers can justify this as a whole-class activity if it is primarily intended for just a few pupils like Finn. However, there is evidence to suggest these programmes can identify pupils whose academic performance is not necessarily a cause for concern, but whose physical performance is below expectations for no apparent reason.

Primitive reflex integration

The Ten Gems for the Brain programme developed by Move to Learn maps its exercises to the hierarchical development of primitive reflex integration. Each floor-based exercise addresses specific reflexes and builds a foundation for more effective functioning. From a very early age, children engage in activities such as rolling, creeping and crawling to provide the brain with additional opportunities to revisit these fundamental learning processes that may have been missed for a number of reasons.

The daily programme works over a year, and can be integrated as part of an ongoing, whole-school inclusive intervention. I have seen its use in Poland, Cyprus, the UK, Malaysia, Singapore and Japan and have implemented it myself in schools in the UK and internationally.

A typical session

Teachers at Treehouse School near

Reading have attended training and now integrate the programme into their daily routine. Their pupils meet every day in the hall where they take off their shoes and socks, find their designated space and follow the teachers' movements. Activities evolve as competence is observed.

A typical session lasts 15 minutes and includes the following.

- A warm-up with a visual focus and breathing activities: standing, seated and on their backs (varies from day to day).
- Floor-based exercises that focus on moving slowly, with control, and coordination, with close observation from the teacher.

“Skilled movements are acquired through developmental and purposeful sequences”

I am tracking the outcomes at the school as part of my research. Over the coming year, the children will move through exercises that include commando crawling, crawling and gliding. Each session is part of a structured routine that encourages perception of movement quality, rhythmical control and a combination of inward and outward focus.

Progress is evaluated against the following criteria.

- DEST-2 scores: changes in performance.
- Move to Learn scores.
- Independent scoring of pre/post tests of drawing and visual-perception.
- Teacher and parent questionnaires relating to perceptions of academic, physical and general performance.

Raising awareness

There is a danger that, as educators, we can focus almost exclusively on cognitive systems without recognising the subtle but powerful influence that our bodies exert on every aspect of functioning. So part of my goal is to raise awareness of the significance of the physical dimensions of academic performance.

The concept of embodied cognition points to the development of physical skills as a precursor to, and enabler of, enhanced academic attainment. The brain, according to the embodied cognition theory, is part of a broader system that involves perception and action, rather than simply functioning as a means to output commands based on knowledge of the world. Higher level learning is seen as grounded in sensory awareness, which therefore needs to be trained if higher level learning is to take place.

Whilst we must continue to provide rigorous phonological programmes, I argue that current research urges us not to underestimate the importance of 'lower level' non-cognitive functioning.

We teachers may not necessarily be able to resolve all Finn's problems. However, running sessions that develop more mature vestibular and sensory functioning lies within our control and may address some of his difficulties.

FIND OUT MORE

- **Understanding Physical Development in the Early Years:** *Linking bodies and minds* by Anne O'Connor and Anna Daly is published by Routledge (2016).
- **Encouraging Physical Development Through Movement-play** by Carol Archer and Iram Siraj is published by Sage (2015).
- **Children Adapt:** *Theory of sensorimotor-sensory development* by Elnora Gilfoyle et al is published by Slack Incorporated (1990).
- **Life span motor development: sixth edition** by Kathleen Haywood and Nancy Gretchell is published by Human Kinetics (2014).
- **Move to Learn:** www.movetolearn.com.au
- **Research papers on the Move to Learn programme:** <http://bit.ly/sc234-02>
- **Dyslexia Early Screening Test**, second edition (DEST-2) by Rod Nicolson and Angela Fawcett from Pearson: <http://bit.ly/sc234-01>



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