

Children's developmental needs should lead policy

Comparing children's neuromotor skills to results from national curriculum assessments reveals that those with less mature motor skills perform less well on these formal measures of attainment.



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'A child must have one foot firmly in the known to explore the unknown' [Paynter, 2014]

Research from the Oxford University Press (OUP), reported in May 2018, found that half of five-year-olds in some schools are behind in their language skills – with experts saying disadvantaged children are disproportionately affected. The Minister for Education is launching two projects, one worth £13.5 million aimed at giving disadvantaged parents the confidence to help their children learn new words through activities, such as reading and singing workshops, which they can take home and use with pre-school children (Harding, 2018).

The second, reportedly worth £10 million, is a plan for a new baseline assessment for children at the start of reception. This latter 'tunnel vision' approach to assessment of cognitive skills in the early years, focusing primarily on symptoms and outcomes, fails to address the fundamental issue of children's readiness for formal education.

In 2004 (NEELB, 2004) and 2005 (Goddard-Blythe, 2005), the results of studies carried out in schools in the UK and Northern Ireland indicated that a significant percentage of children were entering the school system with immature motor skills and that there was a correlation between immature motor skills and lower educational performance using baseline measures of education.

Subsequent (unpublished) projects in schools have revealed a similar picture comparing children's neuromotor skills to results from national curriculum assessments and showing that children with less mature motor skills perform less well on those curriculum measures of attainment (Griffin, 2013; Harte, 2015). These more recent projects have been dismissed by academics and policy makers because they have been carried out by class teachers and lack the rigour of the scientific method.

However, one recent study carried out in cooperation with the University of Loughborough, used a

standardised assessment tool (Movement ABC-2) to investigate children's physical development. In the sample, involving 116 children, it revealed a 6.2 percent decline in measures of balance, 19.7 percent decline in aiming and catching, 15.8 percent decrease in manual dexterity and 18.1 percent deterioration in overall physical development since the norms for the assessment battery were last revised in 2007 (Duncombe and Preedy, 2017).

One suggestion in response to these latest figures has been that the developmental norms for the assessment battery need to be revised and updated. Such a revision would only serve to mask what appears to be an increase in the decline of children's physical skills.

Just as immature speech and language skills (if not the result of hearing or specific language impairment) can be specifically linked to lack of opportunity and experience of conversation, reading and vocabulary, the same can be true for the development of motor skills. They develop as a result of maturation entrained through physical experience in the early years and throughout childhood.

Why do motor skills matter?

Motor skills are important because they support the ability to sit still, develop good hand-eye coordination needed for writing, and the eye movements needed to support reading, writing, copying and catching a ball.

Speech, while developing in the context of social engagement, is also a motor related task. At a conference in Madrid, in May 2018, I presented an analysis of 45 cases where there was a history of having received speech and language therapy (SALT) prior to seeking help for specific learning difficulties a few years later – 100 percent of the sample showed signs of neuromotor immaturity, with more than 80 percent displaying difficulty with control of rapid, alternate fine finger movements.

Adjacent areas in the brain involved in control of the fingers are also involved in control of the muscles of the lips and tongue, suggesting that speech impairment is not always an isolated function of language but may

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be linked to general immaturity in the functioning of the central nervous system, of which neuromotor skills provide a marker.

Why is this important?

Routine assessment of children's neuromotor skills at key stages in development can help to identify children at risk of under-achieving, not because they lack ability, but because they enter formal education with an insufficient 'tool-kit' in terms of the physical skills that are necessary to support physical aspects of learning in the classroom.

Time and again in practice, I have witnessed children receiving support for special needs, whose visual discrimination and visual-motor integration are not sufficiently developed to support reading and writing. No-one had previously investigated these fundamental areas of functioning and in some cases when teachers were shown examples of children's drawings, they could not see the relevance of these impairments to classroom performance. They simply interpreted them as being part and parcel of the child's special educational needs (SEN).

While special educational needs support is essential in helping children to close the gaps in educational attainment, if 'more of the same' in terms of teaching and remedial intervention is not working, it is not the only solution.

The studies published in 2004 and 2005 showed that there was significant improvement in the neuromotor skills of children who participated in a specific daily developmental movement programme in schools (the INPP School Intervention Programme – Goddard-Blythe, 2012) compared to control and comparison groups.

Duncombe and Preedy (2017) found that the overall physical performance of children improved using a general daily movement programme with younger children (Goddard-Blythe, forthcoming publication) – although specific markers of neuromotor immaturity did not improve significantly on this general movement programme in children who had scored more than 50 percent at the outset. It would appear that these children need a more specific developmental programme. All of the studies indicate that children's 'motor vocabulary' can be improved with daily physical activity in much the same way that practice of musical scales can improve musical performance.

This is not to say that immature neuromotor skills are the primary cause of under-achievement, rather that immature neuromotor skills can block specific areas of learning, such as visual tracking, hand-eye coordination and the postural control needed to sit still and pay attention.

What needs to be done?

While, of necessity, the scientific research method needs to focus on specific factors, the response in terms of policy decisions also tends to become over-focused on solutions aimed at outcomes and performance, rather than causes and processes.

The seeds of speech and language are sown in the developmental journey from walking to talking and



are cultivated in the context of social engagement. Yes, interventions need to be put in place to make up the deficit for children who have lacked opportunity for conversation, reading and vocabulary in the pre-school years, but children's physical development also matters.

These observations and apparent trends appear to be part of a much bigger societal problem in which a combination of factors are starting to effect the environments in which children are growing up.

Children need regular opportunities to move and explore their motor skills

Some of these factors may include policies driven primarily by economics, such as increased specialisation, separation and constraint of professional domains. In the UK, this has tended to result in children and families who slip through the net of services that should be in place to identify those at risk and provide relevant support at the earliest possible stage.

In this context, medicine has become specialised in the diagnosis and treatment of disease (while the primary aim of education is to produce results), that responsibility for the basic developmental needs of children has increasingly become lost in the system.

Children who are not quite 'bad enough' to qualify for medical assessment, or 'good enough' in terms of the physical building blocks needed to realise potential in the classroom can be overlooked and are either assumed to be doing 'as well as can be expected', or are passed over to SEN services a few years later. Behavioural signs can also start to emerge as a secondary outcome of

frustration among bright children who under-achieve in the classroom.

Teachers of primary school children and above can be at a loss to know how to help these children who fall into a professional and diagnostic 'grey area'. The physical development of children and theories of child development based on former pioneers, such as Piaget, Vygotsky, Montessori and others, no longer form a standard part of teacher training and even when teachers recognise that physical factors are involved, unless they are physical education specialists, they do not have either the training or mandate to implement specific interventions. Changes in lifestyle affecting parental time and resources may also be contributing to this picture for different reasons at either end of the social spectrum.

If we are to offer every child a level playing field at the point of entry and throughout the school years, then the assessment of children's physical skills is just as important as the performance/achievement assessments already included and proposed for four-year-olds.

At every level of education, developmental readiness is the key to learning success. Until there is better 'joining up' of research, provision of services, and a shift in how policy decisions are reached, moving away from targets and towards tailoring early years education to child development, we will continue to see millions of pounds funnelled into crisis solutions. **eye**

Useful resources

- Forthcoming publications for summer and autumn of 2018:
 - *Movement: Your Child's First Language* by Sally Goddard Blythe. Hawthorn Press: Stroud.
 - *Early Childhood Education Redefined. Reflections and Recommendations on the Impact of Start Right*. Edited by Pat Preedy, Kay Sanderson and Sir Christopher Ball. Routledge: London
 - *The Physical Development Needs of Young Children* by Rebecca Duncombe.
- <http://movementforlearningproject.co.uk>.
- The 24th INPP International Conference, Madrid, 12th and 13th May 2018. <http://www.inpp.org.uk/wp-content/uploads/2017/12/PROGRAMME-INPP-CONFERENCE.pdf>

Key points

- Research from the Oxford University Press (OUP) found that half of five-year-olds in some schools are behind in their language skills – with experts saying disadvantaged children are disproportionately affected
- The Minister for Education is launching two projects, one worth £13.5 million aimed at giving disadvantaged parents the confidence to help their children learn new words through activities, such as reading and singing workshops, which they can take home and use with pre-school children
- The second, reportedly worth £10 million, is a plan for a new baseline assessment for children at the start of reception. This latter 'tunnel vision' approach to assessment of cognitive skills in the early years, focusing primarily on symptoms and outcomes fails to address the fundamental issue of children's readiness for formal education
- In 2004 and 2005, the results of studies carried out in schools indicated that a significant percentage of children were entering the school system with immature motor skills and that there was a correlation between immature motor skills and lower educational performance using baseline measures of education
- Subsequent projects in schools have revealed a similar picture comparing children's neuromotor skills to results from national curriculum assessments and showing that children with less mature motor skills perform less well on national curriculum measures of attainment

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