

“Sit still, concentrate & learn!” Why that’s too hard for some learners.

By Christine Payard [PhD]

*“Stephen distracts and disturbs others around him. He finds it difficult to sit still and concentrate.”
“With more focus and attention to detail and tasks, Jennie’s results would improve.”*

Even though well-intentioned, and possibly accurate descriptors of Jennie’s and Stephen’s behaviour in my classroom, those report comments I made as a teacher weren’t especially helpful. My observations did nothing to identify, nor address, what could be underlying, fundamental reasons why Jenny and Stephen found it difficult to apply themselves in my classes, nor did the comments help Jenny and Stephen function more effectively. If only I knew then what I know now as a neuro-developmental educator!

Educational Context.

Our current school and educational systems are highly complex. Curriculums are overloaded, teachers and students are stressed with the volume of work and content they are expected to cover, standards of achievement are assessed regularly, reported on and compared not only at local school inter-class levels, but also within regions, states, nationally and internationally (APPA, 2014). Educational stakes for students, families, educators and schools, appear to be getting higher, more competitive and determined at earlier ages (Ryan and Weinstein, 2009). Expectations are growing, downward pressure for higher student performance is increasing.



National policies and solutions to address “worrying” literacy and numeracy ratings are being sought, examined, borrowed, modified and implemented across the globe. Australian policy appears to be encouraging more student desk time and sedentary activities in implementing greater standardisation and measurement processes. These policies tend to view learning as primarily a cognitive and social-linguistic activity. Little regard seems to be given to the body and physiological dimensions of learning, unless they present as factors that challenge or impact negatively on the learning experiences of the child and consequently require support and adaptations to accommodate the differences. As a result, the body’s role in learning tends to be viewed from a deficit, problematic and sometimes pathological perspective, rather than as foundational, supporting and enabling the learning process. Physiological and neurological function and maturity is not given the attention it deserves in addressing learning and functional performance. This is particularly concerning for early childhood education, but also has ramifications for older learners.

A growing body of evidence suggests there is a rise in the number of children starting school with immature motor skills and sensory – perceptual difficulties, undermining performance in the classroom and acting as barriers to learning. The Jennies and Stephens in our classrooms may not fit diagnostic categories, but they aren’t achieving to their potential and could, in fact, be demonstrating signs of neuro-motor immaturity impacting on their ability to sit still, focus on their work and concentrate on learning.

Policies for improving academic learning outcomes can only become reality for the children for whom the policies are intended to support if those children are developmentally, physically and neurologically ready for the learning situations they encounter. Physical literacy and readiness for learning is foundational for other academic literacies.

As a neuro-developmental educator, I am endeavouring to learn and understand more about the role of neuro-motor and physiological maturity in learning. I am becoming an advocate for incorporating the story of the body, how it develops and how it supports learning processes in our educational approaches. There is a growing cross-disciplinary group of professionals considering and examining sensory systems, posture, co-ordination, balance, cognitive, emotional, psychological and spiritual dimensions of functional potential and capacity in various life contexts. It is important to remember that many aspects and combinations of challenges within these systems can contribute to poor functioning and learning and that any ONE solution and therapy is not the answer to every situation and difficulty. It reflects the complexity of the brain, the nature of human development and the brain/body connection that there are indeed many ways to approach issues of concern.

Learning and movement.

Learning begins with and through movement: reflex movement, in utero and beyond. From birth, we learn to adapt and change from a very floppy form requiring complete postural support, to become independent, upright beings, able to move in a controlled, bi-pedal manner in our gravitational environment. This process begins with primitive reflex movement. If one side of the mouth is touched, a neonate will open its mouth and turn ready to latch on (usually to its mother's breast, but, to whatever is close to its mouth). The palmar grasp reflex is triggered if an object is placed in the palm of a baby's hand as it grasps onto that object. These primitive reflexes are automatic. But, from the moment they emerge, the body begins a process of integrating these primitive reflex responses that help us survive as infants, replacing them with postural reflexes that support posture, balance, movement and co-ordination in our gravitational environments. Postural reflexes enable us to have greater control of our body in space and facilitate processes to help us understand, control and work efficiently and effectively within our environment, and to learn more about our world using our higher cognitive functional capacity. By the time an infant is around 6 - 12 months of age, the primitive reflexes should have served their function, become integrated and be replaced by postural reflexes enabling us to develop greater and more controlled movement. Postural reflexes should be well developed by the time a child is 3 ½ years of age. "By the time a child reaches school age, in theory at least, the postural reflexes should be developed, and no obvious signs of continued primitive reflex activity should be evident." (Goddard Blythe, 2009, p.32).

Primitive and postural reflexes, the level of their integration and development, are considered to be indicative of Central Nervous System (CNS) function. Primitive reflexes never "disappear". Rather, they become integrated and superseded by postural responses and reflexes, reappearing if there is some form of neurological damage or illness associated with CNS dysfunction or disease. It is not uncommon to see primitive reflexes resurface in the very elderly or those with brain injury/damage.



Transition from primitive to postural reflexes is gradual. It occurs not only as a maturational function within the CNS, but it is also partly environmentally dependent (Goddard Blythe, 2009.) Because primitive and postural reflexes are developmentally sequential, serve varying purposes in human maturation and movement development and are also hierarchical in terms of neurological development, they are considered to provide useful tools with which to assess the CNS. Because reflex responses occur below the level of conscious awareness, their presence or absence enables us to gain information about the CNS free from interference from the psyche and address them from a developmental perspective. (Goddard Blythe, 2005 & 2009).

‘The central nervous system acts as a coordinating organ for the multitude of incoming sensory stimuli, producing integrated motor responses adequate to the requirements of the environment.’ [Bobath B., (1978)] When the CNS is working well, the cortex is free to concentrate on ‘higher’ functions, being involved in intention and motor planning, but not the detailed mechanics of movement ... The maintenance of posture and equilibrium is carried out by the CNS recruiting lower centres in the brainstem, midbrain, cerebellum, and basal ganglia in the service of the cortex. (Goddard Blythe, 2009, p. 5)

In order to gain an understanding of what primitive and postural reflexes can tell us, it is necessary to know:

- what they do, both individually and collectively in early development.
- what role they play in supporting various functions in the acquisition of motor control, balance, and sensory development including the visual, proprioceptive and vestibular systems
- when they are inhibited or developed,
- what the relationship is between inhibition and the development of new skills, and
- what the possible effects are if the primitive reflexes fail to be inhibited and the postural reflexes fail to develop fully. [Goddard Blythe, 2009, pp25-26]

INPP: identifying and addressing neuro-motor immaturity.



The Institute of Neuro-physiological psychology (INPP), founded by Dr Peter Blythe in 1975 and under the current direction of author and practitioner, Sally Goddard Blythe, focuses on examining the effects of immature primitive and postural reflexes on learning and behaviour, and developing protocols for the assessment of abnormal reflexes and related functions. Their work has been shown to impact positively on clients with learning difficulties including dyslexia, dyspraxia and other dysfunctions, and adults with anxiety issues and agoraphobia. [Goddard Blythe, S. (2009)] Specifically, the INPP programme examines primitive and postural reflexes, assesses vestibular, cerebellar function, co-ordination, proprioception, laterality, ocular-motor skills, visual spatial function and some visual processing capacity to form a reflex/ neuro-motor maturity profile. The programme then provides a protocol of movements and exercises to help address the neuro-motor immaturity identified in the assessment process.

The INPP method is non-invasive and intended to replicate developmental movements that help integrate primitive reflexes, develop postural reflexes and address vestibular and proprioceptive immaturity identified in the assessment protocol. It works on largely unconscious areas of movement and postural control occurring at the brainstem and mid-brain level. It is built on a ‘bottom up’, developmentally sequenced approach, rather than a ‘top down’, cortically or cognitively controlled methodology, recognising and addressing the need for a well-developed physiological and neurological basis to support body function in learning. If this foundation is not strong enough, the “top down” cognitively imposed and cortically controlled functions often required in learning, sport, work and daily tasks require considerable additional energy and effort

and can present as “challenging” behaviours. Specifically, retained primitive and underdeveloped postural reflexes affect developmental aspects of motor, vestibular, and postural functions including:

- Visual perception and processing
- Acoustic sequence processing
- Inadequate sensory perception
- Graphic representation of geometrical forms
- Confused spatial organisation
- Poor short-term memory
- Clumsiness
- Language and speech development. (Goddard Blythe, 2009, p7-8)

Whilst it cannot be said that people with retained primitive reflexes and underdeveloped postural reflexes will definitely experience learning difficulties, it has been shown that amongst groups of children and adults with learning difficulties including dyslexia, dyspraxia and dyscalculia and others, significant numbers of them have clusters of retained primitive reflexes and under developed postural reflexes (Neuro-Motor Immaturity). When those have been remediated through carefully structured movement programmes, their learning and functional difficulties have improved and enabled more effective functioning in life, school, sport and other life arenas.

If, because of developmental immaturity, a child is unable to match his or her abilities to the demands of the environment, the difference will most likely be seen in his/her behaviour. In a classroom context, this can present as inattention, reading difficulties and a dislike of reading and written work, clumsiness, inability to sit still and other “challenging” behaviours.

Children in the INPP programme have described their body responses in the classroom in the following ways: “My eyes are angry when I try to read;” “I feel like I’m fighting my body to sit still;” “The letters and words are moving.” Children as young as seven describe their world and experiences as they see and experience them. In some cases, they aren’t aware that their experience is not “normal,” nor that which everyone experiences. This can lead them to think they are “stupid” or “dumb” because of the challenges they face and again, can lead to “mis-behaviour.”

Parents tend to notice that their child is not performing at his/her potential, does not comply with “normal” standards or expectations of behaviour and sometimes describe these children as “quirky”. Presentations may not be serious enough to warrant a medical/psychological diagnosis, but the child’s behaviour and challenging experience often impacts on their function in life and at school. These are often the children who “slip through” the net of diagnostic and ascertained assistance in a school setting. If children are exceptionally intelligent as well i.e. they are twice exceptional children (gifted children with learning difficulties), their presentation can often be more confusing.

It is often a child’s behaviour or inability to cope, that leads parents to seek assistance from alternative practitioners and therapists who view childhood development more holistically. Multi-disciplinary therapists including behavioural optometrists, speech therapists, occupational therapists and physiotherapists have noted positive results when they have first addressed reflex integration issues. A sequential, developmental approach that acknowledges the role of the body in learning and function can be cross-disciplinary and address the multifactorial and complex presentations of some of the children with whom we work. If underlying physiological and neurological bases of balance, posture, co-ordination and attention can be addressed through a developmentally appropriate remediation programme then the results may be more long term and sustainable, providing better outcomes for the children (and adults) with whom we work.

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