



Developmental Readiness – the key to learning success

Learning the first A,B, C...

A = Attention

B = Balance

C = Coordination

D = Developmental
Readiness for

E - ducation



Statutory Framework for the Early Years Foundation Stage

Learning goals and educational programmes:

1. Personal, social and emotional development;
2. Communication, language and literacy;
3. Problem solving, reasoning and numeracy;
4. Knowledge and understanding of the world;
5. **Physical Development;**
6. Creative development

EYFS

“All of the above are inter-dependent and of equal importance

Nevertheless,

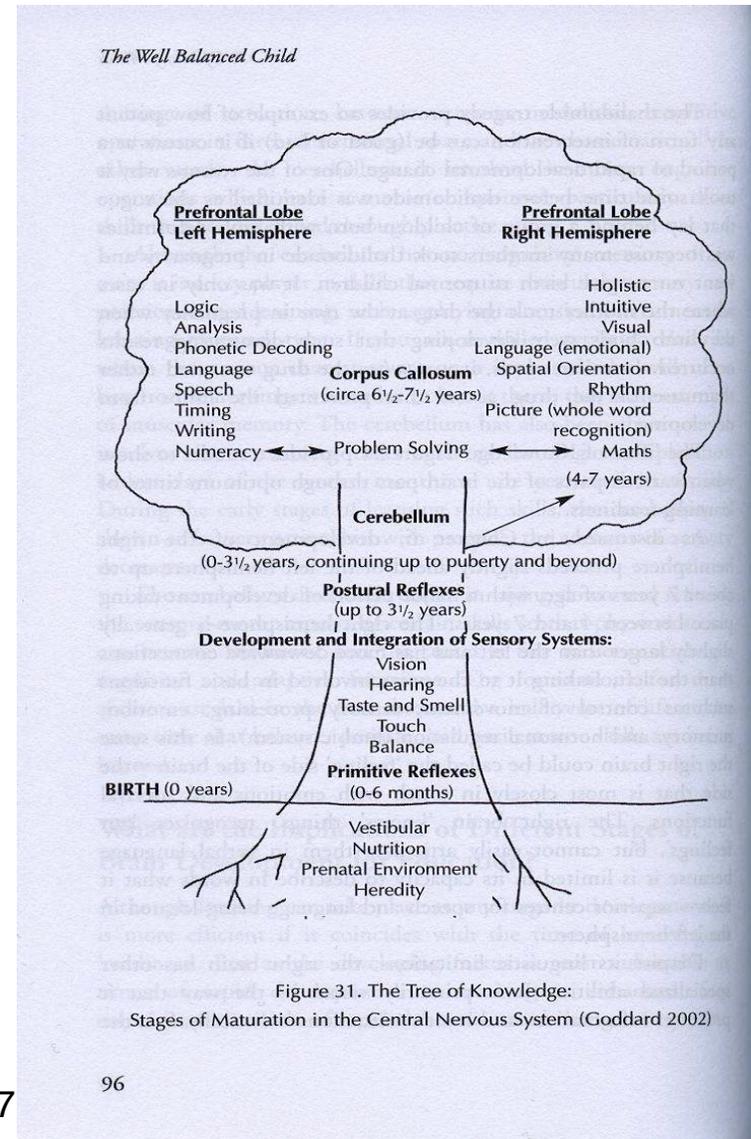
- There are up to 69 targets for cognitive performance, reading, writing and numeracy.
- Inadequate provision for the observation and assessment of neurological readiness
- Flexibility taking stages of neurological maturation and individual differences in the rate of maturation into account.
- Provision for remedial strategies for children who are later or delayed in this respect.

Individual differences

- There is considerable variation in the age at which children are developmentally and neurologically ready to read and write.
- Boys are often later than girls in developing fine motor and language skills and ability to sit still.
- Children born prematurely and/or summer births can be 9 – 12 months younger than their peers in terms of neurological development.

Neurological Development

- Different areas of the brain mature at different stages in development.
- Higher cognitive skills are built upon the foundations of and develop in parallel with: mature reflexes, postural control, balance and coordination all learned in the early years through maturation and **physical interaction with the environment**



Is there any way in which we can identify whether children are physically ready for formal learning?

Balance, posture and motor skills provide indications (reflections) of maturity in the central nervous system of the developing child and can be assessed at key stages in development

Developmental Norms

- Children who are delayed in their physical development need **more** time involved in **general physical activities** before being ready to integrate fine motor and visual integration tasks
 1. **1 Leg Stand**
3½ - 4 years: 8 seconds
 2. **Thumb and finger opposition**
5 - 6 years
 3. **Crossing the midline**
4 years

Early signs of immaturity include difficulties with:

- **Attention**
- **Sitting still**
- **Receptive and expressive language**
- **Pencil grip (writing)**
- **Control of eye movements (reading)**
- **Body awareness (self) and the ability to read and respond appropriately to the body language of others.**
- **Coordination – using a knife and fork, catching a ball etc.**
- **Immature behaviour including poor impulse control, ability to take turns etc.**



Primitive and Postural Reflexes tools to identify physical “unreadiness”

1. Primitive and postural reflexes are present at key stages in development in the first years of life
2. Primitive reflexes are inhibited by the developing brain by 6 months of age
3. Postural reflexes are developed by 3 ½ years of age

Testing of primitive and postural reflexes in the pre-school and school-aged child can help to identify signs of immaturity in the development of the central nervous system

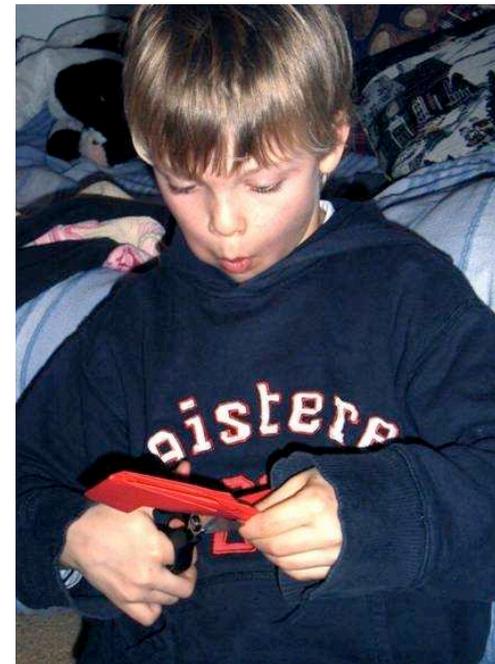
Asymmetrical Tonic Neck Reflex

Infant ATNR
evident in
reception
class child's
writing
posture and
pencil grip



Photographs from Attention, Balance and Coordination: the A,B,C of Learning Success by Sally Goddard Blythe
© SGB 2007
Due to be published January 2009. Wiley- Blackwell. Oxford

Palmar reflex – difficulty developing independent hand and mouth movements – effects fine motor skills



Photographs from Attention, Balance and Coordination – the A,B,C of Learning Success by Sally Goddard Blythe
Due to be published January 2009. Wiley- Blackwell. Oxford

Studies carried out using simple tests for reflexes, balance and coordination showed:

339 + children 5 - 6
years

48% of 5 - 6 year olds in mainstream schools in the in the NEELB (NI) had immature physical skills.

Children with immature physical development performed less well on measures of educational achievement at baseline at the end of the academic year.

400 Children 8 – 9
years

35% of 8 – 9 year olds still showed signs of physical immaturity.

Research published in:

Child Care in Practice. Volume 11:4.
2005:415-432

and

An evaluation of The Pilot INPP Movement Programme in Primary Schools in the North Eastern Education Library Board. Northern Ireland. Report prepared by Brainbox Research. www.inpp.org.uk

Northumberland Study Phase 1

September 2007

Participants 55

Age Range: 5 years 11 months to 7 years 9 months

When reflex scores were compared to reading age against chronological age, children with evidence of immature reflexes showed lower reading age performance compared to children with reflex status commensurate with chronological age

Northumberland Study (Phase 1)

Spearman's Rho = -49, p=0.003(1-tailed), N=30

The results provide evidence that high neurological scores are associated with poorer reading performance.

The results do not indicate that high neurological scores *cause* poorer reading performance

Higher neurological scores may provide evidence of generalised “unreadiness” (developmental immaturity) for reading

Intervention: INPP Schools' Programme 2000 - 2005

resulted in significant improvements in:

(1000 + children across several schools)

- Maturation of physical skills
- Coordination
- Playground behaviour
- Reading
- Drawing
- Concentration
- Self-confidence



Photograph with permission of Ruth Marlee
Northumberland Education

What needs to be done?

- Review of the specific literacy and numeracy targets set out in the EYFS requirements for children under 5 years of age in favour of developmental observation of children's gross motor, fine motor, communication and social skills.
- Training of children's physical development as the primary goal in the early years.
- Proposals for re-instating assessment of every child's physical development at the time of school entry and at key stages in education.
- Consideration of greater flexibility in the time of entry into compulsory education taking individual developmental needs and date of birth into account
- Introduction of effective daily physical exercise programmes into primary schools.
- Improved education of the general public in **what children need** in the early years to develop the physical skills that are necessary to support cognitive learning and social integration.

New book titles

Forthcoming...

Attention, Balance and Coordination

The A.B.C. of Learning Success

SALLY GODDARD BLYTHE

About the book...

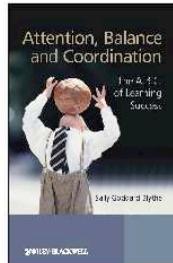
The symptoms of specific learning difficulties such as Dyslexia, Developmental Coordination Disorder, Attention Deficit Disorder and Autistic Spectrum Disorders often overlap. Some of the shared symptoms result from immaturity in the functioning of the Central Nervous System, sometimes referred to as Neurological Dysfunction or Neuro-Developmental Delay. Learning relies upon adequate mastery of motor skills: for example, in order to write a child must learn to hold a pencil and develop hand-eye coordination. Even sitting still and paying attention require postural control, balance and orientation, which ultimately require the two sides of the brain to cooperate. Attention, balance and coordination are the first A.B.C. on which all subsequent learning is built.

Attention, Balance and Coordination explores the physical basis for learning. It is the most up-to-date handbook for professionals involved in education and child development on the role of reflexes, posture and motor skills in educational achievement, as well as a source of new understanding of the source of specific problems with behaviour. Sally Goddard Blythe explores why early reflexes are important, their functions in early development, the effects on learning and behaviour if these skills retained and the possible effects on other aspects of development such as posture, balance and motor skills.

The significance of posture and balance is explained together with a review of relevant literature in the field and the origins of The Vestibular-Cerebellar Theory. The INPP Developmental Screening Questionnaire – an initial screening device to identify children who may be at risk of neurological dysfunction – is also included together with an explanation on how to use and interpret it. Dr Peter Blythe will contribute a chapter on the development of the INPP Method. The book concludes with intriguing questions for the future. For example, is there a need for a new breed of professional – the Neuro-Educator?

About the author...

Sally Goddard Blythe is Director for the Institute of Neuro-Physiological Psychology in Chester, UK. She has is the author of a number of widely acclaimed books, including *Reflexes, Learning and Behaviour* and *The Well Balanced Child*. She has written many papers and lectures frequently.



ISBN 978-0-470-51623-2 January 2009
Paperback 472 pages RRP £39.99/€87.80

www.wiley.com

Special Education
...from Wiley-Blackwell



Hawthorn Press
early years series



What Babies and Children Really Need



Sally Goddard Blythe

Acknowledgements

To staff, parents and children of all participating schools:

Pettman H, Mellor Primary School, Leicester

Bertram S, Prince Albert School, Birmingham

Preedy P, O'Donovan C, Knowle C of E Primary School Solihull

Scott J, Wolinski R, Kingsley Prep School

Micklethwaite J, Swanwick Primary School, Derbyshire

Joan-Ann Wilson Head of Literacy for the North Eastern Education Library Board (NEELB).

DfES Best Practice Research Scholarship for funding of studies in England.

DfES Northern Ireland for funding of the NEELB Study

Silvester E, Smith G, St Margaret Mary RC School, Carlisle

Youth Sport Trust DVD “Inspiring Partnerships”

Turner G, Kingstanding Education Action Zone. Birmingham.

Marlee R, Northumberland Education

Photographs with permission of St Margaret Mary RC School, Carlisle, Battle Hill School,
Newcastle-upon-Tyne

Dr Fiona Fylan, Brainbox Research, Leeds for statistical analysis and advice for all studies

The Institute for Neuro-Physiological Psychology (INPP)

INPP Ltd

1, Stanley Street

Chester

CH1 2LR

Tel/Fax 01244 311
414

Email:

mail@inpp.org.uk

www.inpp.org.uk



References and further reading

- Goddard Blythe SA, 2005. Releasing educational potential through movement. *Child Care in Practice* 11/4:415-432.
- Youth Sports Trust DVD and pamphlet Inspiring Partnerships. St Aidan's School. www.youthsporttrust.co.uk
- Turner G, 2007. Report on the INPP Developmental Exercise Pilot Programme in Kingstanding Education Action Zone