


Premature birth and Complex Learning Difficulties and Disabilities ; Themes from an International Research Study

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Department for
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Complex learning difficulties and disabilities research project

Developing meaningful pathways to personalised learning



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Welcome

Welcome to the SSAT's Complex Learning Difficulties and Disabilities (CLDD) Research Project website.

The Department for Education identified through feedback from schools that educators needed a new

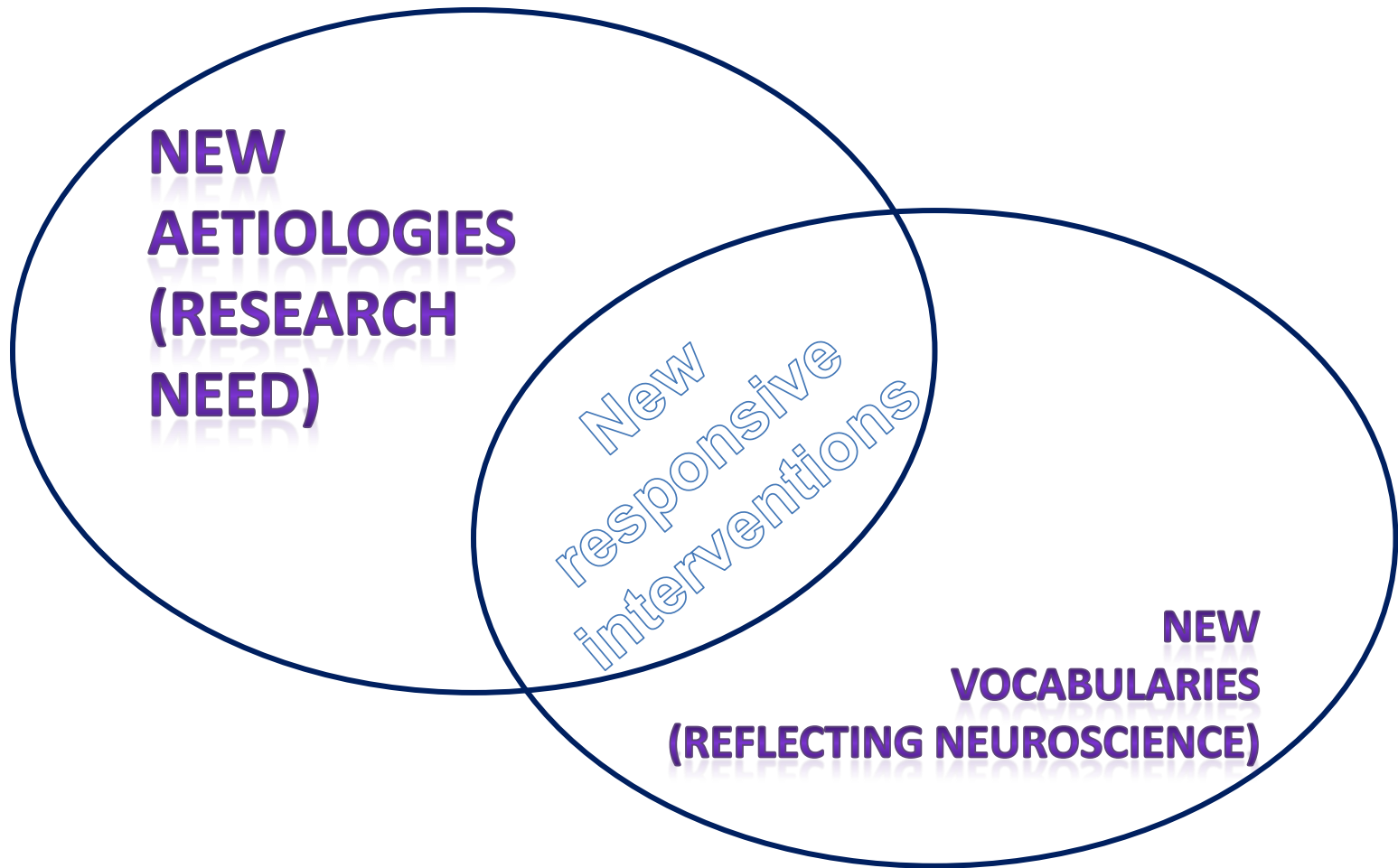
<http://complexld.ssatrtrust.org.uk>

Photography by Andrew Hendry and Michelle Brookes





**Children with Complex Learning Difficulties
and Disabilities - CLDD**



Definition of Complex Learning Difficulties and Disabilities

Children and young people with Complex Learning Difficulties and Disabilities (CLDD) have conditions that co-exist. These conditions overlap and interlock creating a complex profile. The co-occurring and compounding nature of complex learning difficulties requires a personalised learning pathway that recognises children and young people's unique and changing learning patterns. Children and young people with CLDD present with a range of issues and combination of layered needs – e.g. mental health, relationships, behavioural, physical, medical, sensory, communication and cognitive. They need informed specific support and strategies which may include trans-disciplinary input to engage effectively in the learning process and to participate actively in classroom activities and the wider community. Their attainments may be inconsistent, presenting an atypical or uneven profile. In the school setting, learners may be working at any educational level, including the National Curriculum and P scales. This specifically applies to England but might be relevant to the curriculum context of other countries.

<http://complexld.ssatrust.org.uk>





Key Defining Words

- *Co-existing*
- *Overlapping*
- *Interlocking*
- *Compounding*
- *Co occurring*
- *Unique and changing learning pattern*
- *Inconsistent attainments*

Children with Complex Needs....

.....are a group that has emerged rapidly in the first decade of this 21st Century, largely due to modern medical progress, (eg children born very low birth weight, due to extreme prematurity,) but there are also Societal factors that are presenting which are a cause for concern in the UK and Australasia, (eg Fetal Alcohol Spectrum Disorders.)

Carpenter, B., Cockbill, B., Wiggett, D., Egerton.,J.(2013)

ENGAGING CHILDREN WITH COMPLEX LEARNING DIFFICULTIES AND DISABILITIES IN THE CLASSROOM.

Special Education Resource Update, 23, (2), 1-6
(South Australia)



Children born prematurely



Facts on prematurity

- One in eight children (80,000 per annum)
- 63% born at less than 28 weeks survive

(Medical Research Council, 2012)



In your classroom...

- 4 children born preterm in every classroom
- 2 in every 100 children are born extremely preterm - 69% will have some degree of disability

(Hornby and Woodward, 2009)



Birth before 34 weeks...

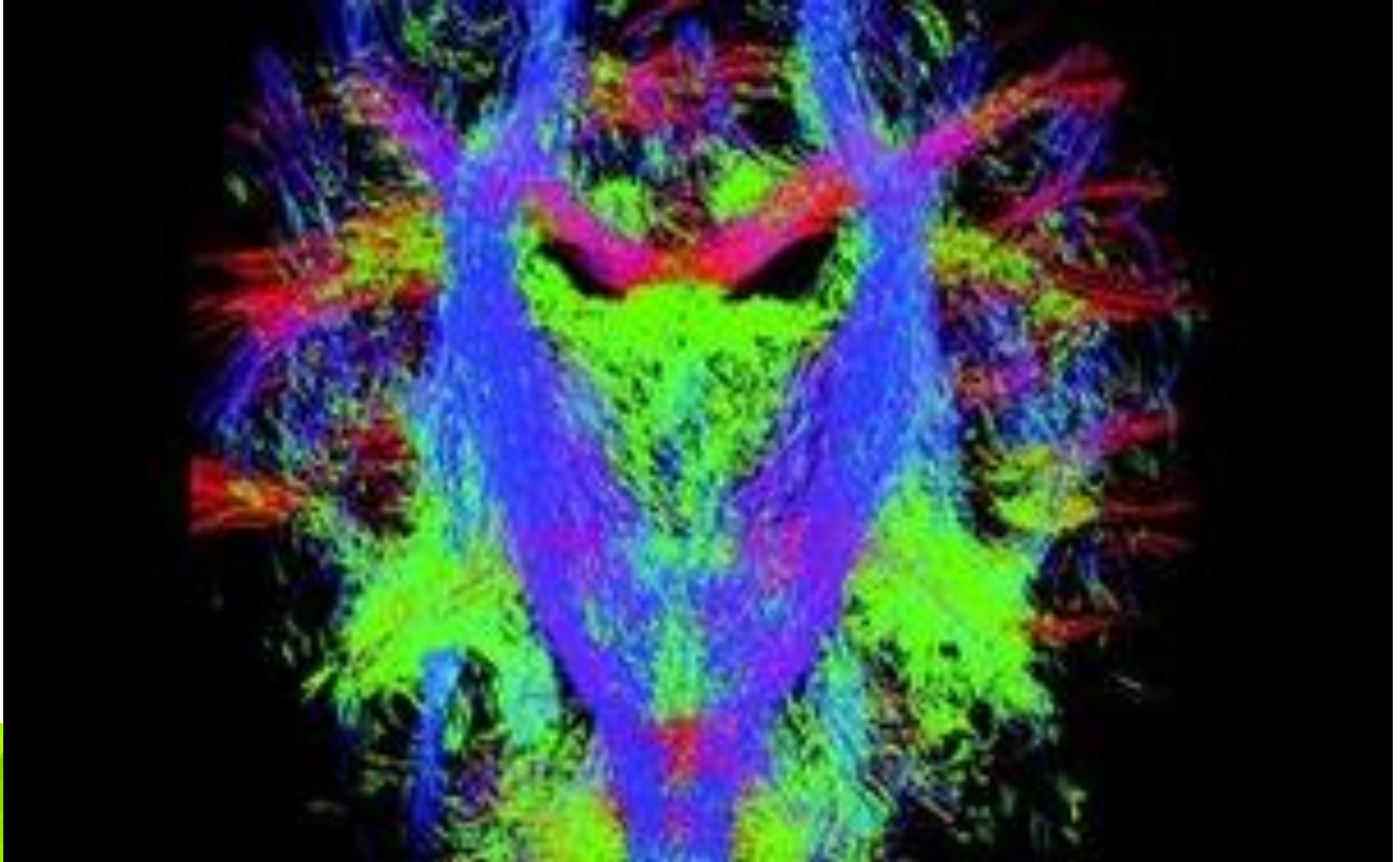
Very different brain maturation...

- Reduced grey and white matter volumes
- Abnormalities of white matter and other structures
- Developmental and neurocognitive disruption or delays

(Woodward et al., 2012).



Nerve fibre bundles in the newborn brain



EPIcure UK Study

- **Established 1995**
- **80% survival of children born at less than 26 weeks**
- **Longitudinal study**
- <http://www.nottingham.ac.uk/human-development/EPIcure/>

(Marlow et al., 2005)

A decorative graphic in the bottom-left corner of the slide, consisting of several overlapping green leaf-like shapes with visible veins, creating a textured, organic appearance.

Preterm: Behavioural, Emotional and Psychiatric Problem

Main problems:

- * ADHD of the Inattention Type**
- * Emotional Problems**
- * Autistic spectrum symptoms**
- * Increased risk of a psychiatric diagnosis**





‘Wired differently’
A mother of a premature-born son

‘Without action...

...we are asking teachers to teach with one hand tied behind their back. There are children struggling who could learn in a different style.’

Andy Cole, former CEO, Bliss
- the special care baby charity



‘Pre-term children are at high risk for learning difficulties and poor academic attainment at 11 years, particularly in mathematics.’

Johnson et al (2009)
Archives of Disease in Childhood



Maths

- Area of significant impairment - 44.7% of extremely preterm children have severe/moderate difficulties
- Difficulties associated with reduced grey matter in the parietal lobe
- Difficulties predicted by executive function delays and impairments (above IQ and reading ability).

(Hornby and Woodward, 2009; Johnson et al., 2009)



What about teenagers?....

- New research at the University of Adelaide has demonstrated that teenagers born prematurely may suffer brain development problems that directly affect their memory and learning abilities. The research..... shows reduced 'plasticity' in the brains of teenagers who were born preterm (at or before 37 weeks gestation).

Dr Julia Pitcher and Dr Michael Ridding from the University of Adelaide's Robinson Institute ,

Journal of Neuroscience. 14th November, 2012



“Engagement sets the occasion for optimal learning to occur”

From an International Literature Review
Carpenter, et al (2011)



‘For students with special needs/disabilities, research has suggested that engaged behaviour is the single best predictor of successful learning’

*(Iovannone, Dunlap, Huber & Kincaid, 2003;
Bulgren & Carta, 1993; McWilliam, 2010;
Casey and McWilliam, 2005)*



Without **Engagement** there is no

- deep learning
- effective teaching
- meaningful outcome
- real attainment
- quality progress

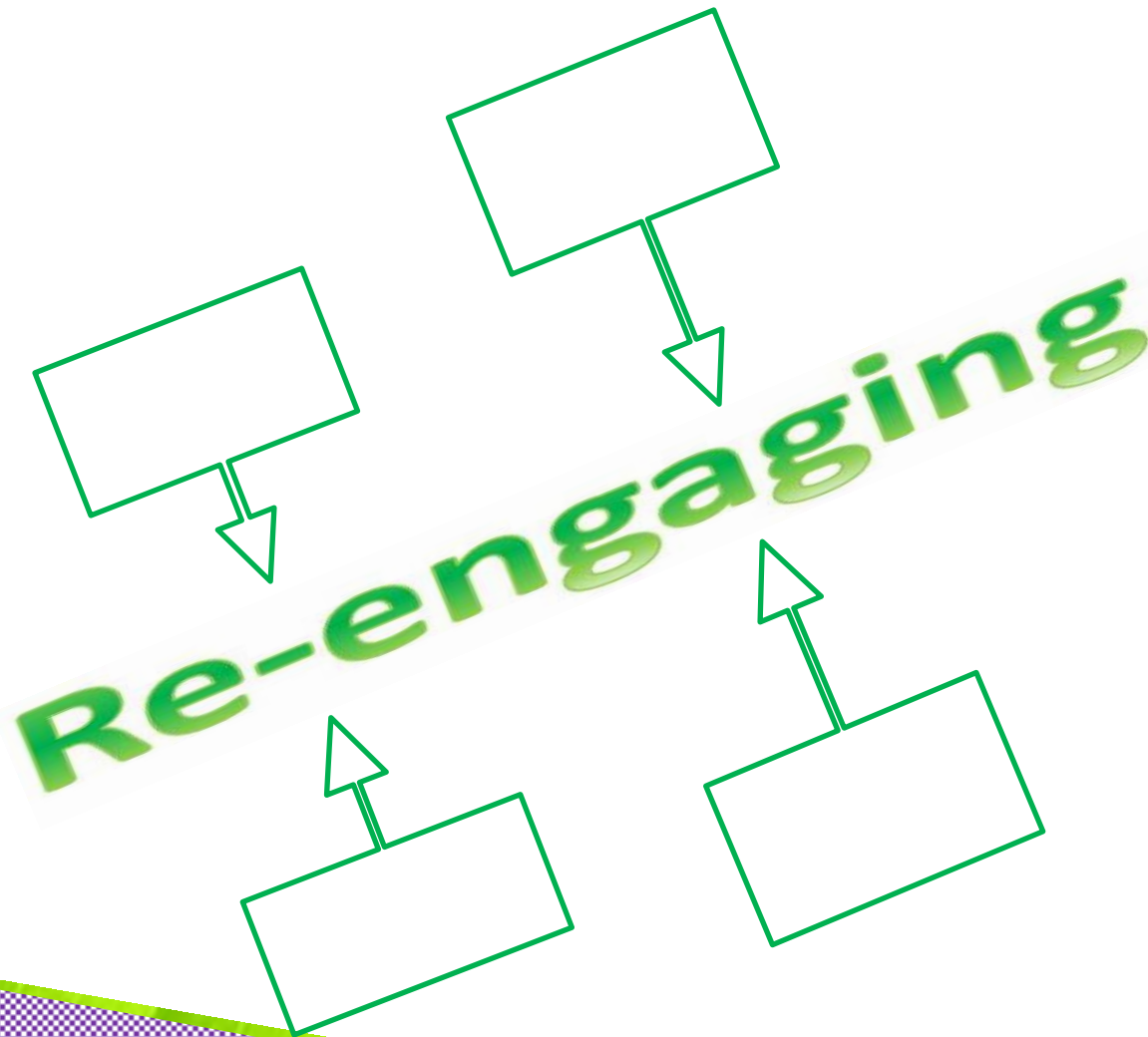
Carpenter, B. (2016)



**“Engagement is the
antidote to pedagogical
vulnerability”**

An Engagement Model of Behaviour Management

Disincentives



Incentives



Attachment Disorder


Attachment theory is the study of how we attach to people in the early stages of our development, and its impact on how we view ourselves and develop relationships throughout our lives. (*Golding, 2008*)

Prematurity and School.


‘Premature birth is a significant predictor for school underachievement, poor social and psychological wellbeing and later unemployment and so this increased survival rate can have an impact on schools.’

(Carpenter and Egerton, 2013)

<http://www.optimus-education.com/impact-prematurity-special-educational-needs;>




Schools need to:

- Identify children born premature
 - Be aware of options and develop a strategic response
 - Identify indicators of increased risk in children as early as possible
 - Ensure ongoing assessment and monitoring
 - Provide guidance and training for educators
- 

What can schools do?

- Ask parents about their child's birth/early life history
- Discuss the child's developmental readiness
- Provide developmentally adjusted teaching
- Encourage children to lead and achieve
- Adjust test scoring for 'full-term equivalent' age.


(Bliss, 2012)



Educational strategies

- Assess cognitive workload demand
- Task structure and reinforcement
- Personalisation and support
- Maintain attention by 'chunking' learning tasks
- Predictable routines and graded changes
- Working memory training
- Attention training and focusing tasks
- Support social skills and integration

(Wolke, 2013, Carpenter et al ,
2015.)



Sensory processing.

- Preterm infants had significantly poorer sensory processing function preintervention when compared with term infants. There was a significant **improvement** in preterm infants' sensory processing functions after the sensory integration **intervention**. In conclusion, preterm infants should be evaluated for sensory processing disorders and **individualized** sensory integration interventions should be **implemented**.

Pekcetin , S et al.

Perceptual and Motor Skills 2016, Vol. 123(2) 411–423



An action plan – priorities.....

- Identification of children born premature on school entry
- Continuing regular assessment
- Proactive early identification of emerging motor, communication, cognitive, emotional and social difficulties; some may not appear until pre-teenage years
- Published guidance on teaching children born premature at all phases of the education system
- A focus on identifying effective teaching and learning strategies
- Professional development for educators
- A transdisciplinary approach – including families and a range of professionals – to establish educational, social and developmental priorities

Parental feedback....

‘A massively supportive school, an experienced and wonderful reception teacher, and the best learning support assistants in the world will change your life.’

(O’Connor, in

Carpenter and Egerton, 2013)



‘We need a whole community to develop a child. We are that community, and these are our children.’



Contact details

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