

Dyscalculia

Margi Leech, 2015

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Outline

- What is dyscalculia?
- 'Symptoms'
- Why is maths 'hard' for some people?
- Support
- Intervention and learning programmes
- Future for the student

Dyscalculia

- Severe difficulty in mathematics, not explained by general cognitive difficulties or educational opportunities
- Also called “Mathematics Disorder” (DSM-IV), or “mathematical learning disabilities”
- Prevalence: around 6% (same as dyslexia!)
- Has genetic component (runs in families)
- Understudied compared with dyslexia

Kosc, 1974; Shalev & Gross-Tsur, 2001; Geary, 2004, 2011; Badian, 1983; Lewis, Hitch, & Walker, 1994

Kosc

Verbal (interpretation of terms)

Operational (performing operations)

Lexical (written terms, symbols)

Graphical (symbol manipulation)

Ideognostic (mental calculations)

Practognostic (pictorial representation)

Derek Haylock,

UK maths education consultant and author

Process of building up **connections** between:

- different experiences
- mathematical symbols
- real-life and concrete experiences
- informal and formal language
- pictures

Co-occurring difficulties

Both verbal and non-verbal:

- Dyslexia (50%)
- ADHD (30%)
- Dyspraxia
- Spatial difficulties

Dyscalculia and dyslexia seem to be cognitively independent.

2e /Gifted and learning disabled

Recently I was told by a teacher that a child that I was working with “could not be gifted, because can’t even read!” This comment was made despite the evidence of a psychologist report confirming the student’s high abilities and challenging learning difficulties.

Misconceptions obviously continue around Twice Exceptional or Gifted Learning Disabled students, therefore I found this article in the Huffington Post by Psychologist, Daniel Peters very timely: “Smart-Shaming: Sorry But Your Child is Too Bright to Qualify for Help”.

“2e students fall at both ends of the bell curve. Put another way, they are both hot and cold, or both advanced and behind.....

So why don't these kids get tested and qualified for special education like others with needs?”

Find the answer at:

http://www.huffingtonpost.com/daniel-b-peters-phd/sorry-but-your-child-is-t_b_7223364.html

Anxiety – Brain Under Stress Condition

- Blood flows to the reptilian brain - heart beats faster - blood pressure rises
- Problem solving, creativity, flexibility functions are displaced
- Thinking skills are replaced by survival skills
- Peripheral vision lost -Focus-source of anxiety - Behaviour learnt in childhood returns
- Emotional well-being is crucial to the learning process.

Future learning

- Clear guidance
- Practical
- Model
- Context
- Visual representation
- Making connections
- Spiral the approach with review
- Allow time to think and ask questions
- NZQA
- Unit Standards
- NCEA Levels
- IB
- Tertiary support services

Parental Participation

- Thanks
- Generational
- First teachers
- Emotional support for student
- Long term care
- Real reports
- IEP planning

