

Detecting and supporting children with dyscalculia

There are far too many school children experiencing difficulty with maths. 1 in 20 children present a severe disability known as dyscalculia where the developmental component skills of acquiring simple, foundational number skills is immature, reflecting in an undeveloped number sense.

Given the wide range of dyslexia screening and interventions that take place within schools, it is now well overdue that all children should be assessed to detect children at risk of dyscalculia and maths difficulties so that purposeful interventions can be planned.

Our everyday tasks of getting to an appointment, reading a bus or train timetable, estimating and comparing which queue is shorter or longer and knowing that we have been given the right change involve some of the many basic skills that rely on having a number sense. A lack of these foundational number skills can lead to long-term anxieties and social exclusion.

Dyscalculia

There are potentially two types of maths developmental difficulties:

1. Developmental dyscalculia
2. Maths developmental delays

These maths developmental difficulties are exacerbated by the presence of co-occurring conditions such as:

- ▶ dyslexia
- ▶ working memory impairment
- ▶ sensory impairments
- ▶ dyspraxia
- ▶ auditory processing difficulties
- ▶ visual-spatial challenges
- ▶ attention sequential difficulties.

Neuroscience research shows that children with developmental dyscalculia symptoms severely struggle with maths because of abnormality in the areas of the brain due to fewer nerve cells, weak or damaged connections.

A profile of a learner with developmental dyscalculia will show both developmental dyscalculia symptoms and maths developmental delays.

Children have difficulty:

- ▶ knowing that the number of dots when rearranged remains the same
- ▶ knowing that the number 12 is more than 7
- ▶ holding the visual image of number and recording it
- ▶ associating meaning to the + sign symbol
- ▶ representing the order of magnitude on an empty number line.

A profile of a child with maths developmental delays will show a secure number sense but delay in responding accurately to numbers in relationships, for example within number bonds, number facts, times tables, mental maths, adding, subtracting and word problems. Furthermore, these difficulties can also be contributed to by co-occurring conditions and environmental factors.

We are not born with the skills to add, read a clock or read numbers. However, we are born with the potential to develop these capacities – or not – depending on our experiences during infancy, throughout childhood and into adolescence.

Intervention strategies

To support children with dyscalculia or maths developmental delays requires a high-quality graded assessment that offers an individual profile which detects the underlying problems.

Programmes such as Dynamo Profiler, which assesses for both developmental dyscalculia and then signposts to an intervention programme, are high-quality researched-based programmes being used by SENCOs across the country, who report positive outcomes.

Marjorie Thorogood, an advisory teacher for learning, carried out an independent case study in schools in the borough of Hounslow and reported that 'children have made accelerated progress and have almost reached top level'.

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