



## DYSCALCULIA: A Position Paper for GPS

Glasgow Psychological Service (GPS) works to apply psychology and evidence based practice to support the inclusion of children and young people in their local schools and communities. With a focus on building strengths and resilience we work together with others to support additional needs and improve outcomes for all (Vision, Values and Aims, GPS website). In common with all Scottish Educational Psychology Services we provide five core functions to our communities – consultation, assessment and intervention, training, and research (Scottish Executive, 2001).

When delivering assessment and intervention we are guided by our professional standards (ASPEP, 2014) and education legislation and practice (Children and Young People (Scotland) Act, 2014). This means any assessment we contribute to will always be carried out in partnership with children and young people, families, education staff, and any other relevant persons. Assessment will always be carried out in context, recognising the importance of the environment as part of a child's profile of resilience and risk factors. Assessment will always be carried out ethically (being minimally intrusive), be strengths-based, and directly inform intervention.

In line with the above principles, EPs may support the assessment of children with needs relating to mathematical ability. This would be achieved by gathering data, coming to an agreed formulation of the nature of the difficulties, and supporting a plan – do – review cycle of supporting the identified needs.

Currently, dyscalculia does not have a universally agreed and evidence-based definition (Dowker, 2009; Gillum, 2012) and within Scottish education there is no commonly agreed and accepted definition<sup>1</sup>. Within the English education system, dyscalculia is defined as 'a condition that affects the ability to acquire arithmetical skills' (DfES, 2001, p2); a very broad statement which does not cover the underlying reasons for the difficulties or point to intervention. Within the field of neuroscientific research, definitions are narrower and focus primarily on the etymology of the difficulties. Butterworth et al. (2011) suggest it is defined as 'reduced ability for understanding numerosities' and relates dyscalculia to an underlying difficulty with subitising<sup>2</sup>, rather than wider mathematical difficulties. This more specific definition does not take into account the wide array of contextual and concurrent factors (e.g. confidence in maths, motivation, general learning needs etc.) which may contribute to additional support needs within maths, and again does not clearly lead to intervention.

<sup>1</sup> The Addressing Dyslexia Toolkit Working Group are currently working on providing a national definition. Currently (June 2019) there is no expected date for publication.

<sup>2</sup> Subitising is the ability to 'know' how many objects you are looking at without having to count each object individually. Most people can subitise up to around 4 objects.

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Additionally there is currently scant evidence that using the label of dyscalculia leads to successful intervention, rather it is the individualising of support to meet each child's unique strengths and weaknesses which is most likely to be useful (Attwood, 2009; Dowker, 2009).

GPS therefore will continue to focus, not on assessing for dyscalculia, but on identifying the specific nature of a child's strengths and needs within their unique environment, and how we can work collaboratively to effectively build on these strengths and remove identified barriers to learning.

### Further reading/Sources of support and suggested interventions

This position paper should be read in conjunction with 'Supporting Numerical Difficulty in Schools' which gives further information about assessment and interventions. Access through EDRMS:

[https://edrms/livelink/llisapi.dll/fetch/2000/9455273/9455285/74854423/104215738/102330196/102333151/102332200/Supporting\\_Numerical\\_Difficulty\\_in\\_Schools.pdf?nodeid=102333925&vernum=-2](https://edrms/livelink/llisapi.dll/fetch/2000/9455273/9455285/74854423/104215738/102330196/102333151/102332200/Supporting_Numerical_Difficulty_in_Schools.pdf?nodeid=102333925&vernum=-2)

These resources from Devon are also useful in understanding and supporting children with mathematical difficulties:

[https://edrms/livelink/llisapi.dll/fetch/2000/9455273/9455285/74854423/104215738/102330196/102333151/102332200/Understanding\\_CYP\\_with\\_Mathematical\\_Difficulties\\_%28devon\\_resource%29.pdf?nodeid=122022374&vernum=-2](https://edrms/livelink/llisapi.dll/fetch/2000/9455273/9455285/74854423/104215738/102330196/102333151/102332200/Understanding_CYP_with_Mathematical_Difficulties_%28devon_resource%29.pdf?nodeid=122022374&vernum=-2)

[https://edrms/livelink/llisapi.dll/fetch/2000/9455273/9455285/74854423/104215738/102330196/102333151/102332200/Supporting\\_Children\\_with\\_Mathematical\\_Difficulties\\_%281%29\\_%28devon\\_resource%29.pdf?nodeid=122020239&vernum=-2](https://edrms/livelink/llisapi.dll/fetch/2000/9455273/9455285/74854423/104215738/102330196/102333151/102332200/Supporting_Children_with_Mathematical_Difficulties_%281%29_%28devon_resource%29.pdf?nodeid=122020239&vernum=-2)

Further support for individual work and staff training can also be sought from GDSS.

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### References

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