

## For Managers: Dyscalculia

### Further introduction

'Dyscalculia is a condition that affects the ability to acquire arithmetical skills. Dyscalculic learners may have a difficulty understanding simple number concepts, lack an intuitive grasp of numbers, and have problems learning number facts and procedures. Even if they produce a correct answer or use a correct method, they may do so mechanically and without confidence'. (DfES, 2001).

A dyscalculic student will have fundamental difficulties with number sense, number facts and calculation, and difficulties with mathematical reasoning and difficulties applying mathematical concepts, facts, or procedures to solve quantitative problems.

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### Recommended provision

#### Equipment and software

It is recommended that you have the following equipment available for helping students with dyscalculia:

- Highlighters
- Coloured paper
- Squared paper
- Post-its
- 2-line calculators (which display input and output)
- Talking calculators
- Teaching Clock
- Concrete manipulatives; e.g. Cuisenaire rods, Deines Blocks, money.
- Flash cards and fraction mats.
- Multiplication, trigonometry, engineering paper-based tables and diagrams.

## Physical learning environment

A quiet workspace free from distraction is essential. A one-to-one workspace helps to reduce maths anxiety. Be aware that students will feel uncomfortable discussing maths and their difficulties in public.

## Online learning environment

Provide documents in a format which can be transformed to meet the reader's needs and which can be read aloud and colour annotated, including the equations. Accessible Word documents and accessible web pages are best. Provide materials in a choice of formats, e.g. the same concept explained in video, via interactive example and in text.

- <https://stem-enable.github.io/Accessibility-of-maths-e-resources/>

## Additional/alternative provision

Students will achieve better outcomes when supported by a tutor on a 1:1 basis.

## Tutor training

Where possible, students should work with tutors who hold a British Dyslexia Association (BDA) Approved Teacher Status qualification (ATS) in dyscalculia or equivalent qualification in other countries.

We recommend that you include a discussion on these Manager and Tutor leaflets in tutor training at your institution. Over the coming years, accessibility training will become an important feature of maths support tutor training at local and national levels. For further information on tutor training, contact your maths support network.

## Working with other university services

It is important to know the Disability Department in your institution who can supply further details about dyscalculia.

- You should have information leaflets about the Disability Department available for students in your centre and vice versa.
- The Disability Department may also be able to recommend that other students use your maths support centre.
- If you think a student in your centre has dyscalculia, you should encourage and support the student to make contact with the relevant Disability Department in your institution.

## Recommend reading

Trott, C. (2015) Dyscalculia in Higher education. In, Chinn, S. (Ed). The Routledge Handbook of Dyscalculia and Maths Learning Difficulties. Routledge. Oxon.

Drew, S. (2009) Dyspraxia in Pollak D (ED) Neurodiversity in Higher Education: positive responses to specific learning difficulties, Wiley Blackwell, Chichester

Chinn S. (2012) More Trouble with Maths. Routledge, Oxon

<http://www.meshguides.org/guides/node/652>