

The Challenges Experienced by Adults with Maths Difficulties

1. The Importance of Maths

Numbers are everywhere. They are an integral part of our daily lives. If you have difficulties with number or have a poor sense of number, there will be many challenges. Travel, money and time all rely on understanding number. Parsons and Bynner (2005) found that adults with poor numeracy skills were twice as likely to be unemployed, attend fewer work-related training courses, experience lower weekly wages and have poorer promotion opportunities. They are also likely to have the lowest hourly rates of pay. Parsons and Bynner said: "poor numeracy rather than poor literacy was associated with low economic well-being." The importance of number and number sense cannot be underestimated.

2. Maths Difficulties

There are many reasons why some people experience mathematical difficulties: maths anxiety, dyscalculia, dyslexia or other neurodiversities, working memory issues, poor teaching, long periods of absence from school and many more. Dyscalculia is only one of these reasons. It is a specific learning difference that cannot be explained by other factors. Fundamental issues with number and number sense mean that it is difficult to read or write numbers, understand place value and do basic arithmetic. Numbers such as 541.6 may hold little meaning and number lines, too, can be difficult particularly if the scale does not go up in single units. Furthermore, dyscalculics experience issues with the application of number to time or money.

3. Transition to Higher Education

For those who wish to pursue a degree course, the transition into Higher Education (HE) can be difficult. To gain entry a GCSE grade C or 4/5 is usually needed. This can act as a barrier to entry, which is frequently insurmountable. Starting a course in HE also brings further challenges. Finding your way around can be difficult if you have a poor sense of direction. Good skills in time management are needed so that you get to the right place at the right time. Budgeting and managing a student loan are also necessary skills. Trott and Chinn (2016) conducted a survey of maths support tutors and dyslexia support tutors to answer two questions: What maths do students expect to face on entering HE? What maths is unexpected? The results showed that there were over 40 courses where students were completely unaware that there would be any mathematical content. The most frequently cited courses were in the social sciences, followed by business, psychology and subjects allied to medicine, which includes nursing. Numeracy skills are an essential part of nursing, accurately calculating drug doses and drip rate as well as taking patient measurements are needed.

Trott (2015) discusses the case of “Liam” who was identified as dyscalculic in his first year at university. Liam had good literacy skills but had difficulties sequencing numbers, placing numbers on a number line and with basic arithmetic operations. He was unsure of the basic operations and used inappropriate strategies. When he started his HE course he was unaware of the maths content. In the first part of his course he had to work with tables of information and also graphical representations. He had difficulties with the rows and columns in tables and with calculating percentages. He worked with a support tutor over many weeks to be able to master this. They also worked on graphical representations. Liam had difficulty with single number lines so had particular problems with graphs, which are two number lines, perpendicular to each other, and working simultaneously. He found this concept difficult to see. It took several weeks for Liam to understand this. However, once understood, he progressed to other more advanced graphical work in his course and was able to be successful.

4. In the workplace

The transition from HE to the workplace can be challenging. The first step is often to sit a numeracy test. This is taken before interview and usually online, sometimes undertaken without the use of a calculator. They are also timed with the allotted time very short. Those who have difficulties with maths will struggle with these numeracy tests and are unlikely to progress to the interview stage. The tests present a huge barrier to entering the workplace. Many of those who struggle with maths, choose to avoid them and so restrict their career opportunities.

Once in the workplace, calculations with time and money are essential. Getting to work on time and to meetings or appointments is a challenge for those who experience difficulties with maths. Poor timekeeping can result in the loss of a job. Drew (2016) conducted 14 semi-structured interviews with dyscalculics. One of the participants in Drew’s study worked in hairdressing. She commented:

We had a diary, and I struggle with time... you would have half an hour for a cut-and-blow-dry, whereas if someone was having a colour, you would have to book them in for half an hour, then a gap of half an hour, and then another half an hour for the cut. That would be a bit difficult, because the general set for a diary for hairdressing is broken down into 15-minute slots.

Another of the participants in Drew’s study had problems with money in the workplace. She said:

The first job I ever did was in a bar ... I was just getting it so

consistently wrong. I kind of kept saying to them, "Look, please don't get me on the till because it's horrible and it's not good for the customers either." And there was one night where the till was fifty quid down and I was just convinced...it could have been anything, but I am so convinced if there's a problem with maths, it's me, I was just like "It's probably me. I'll leave.

Maths anxiety plays a big part in those who face mathematical challenges. The thought of maths can cause sweating, increased heart rate, dizziness or tears. This, in turn, can lead to an inability to try to attempt the question. Trott (2015) cites the case study of "Fiona", who studied Countryside Management. As part of her course she had to count the number of diseased trees of different species in an area of woodland and interpret the results. Fiona struggled with percentages and averages. She could not understand how real life data is translated into graphical representations, which she felt abstract. She commented:

I can read the words. I haven't got a problem with the words, but I don't know what they want me to do. And I was there and I collected this data, so I was on the ground doing it. That's fine ... I can count the trees and I can measure the trees. You ask me to interpret the data and that's a whole different task.

5. Conclusion

Dyscalculia and maths learning difficulties impact significantly on everyday life. Mathematical skills are needed in many situations from travel to telling the time and managing money and budgets. When faced with any numbers or symbols one student commented:

I then get all anxious and upset and just stressed... and that's when the shutters will come down and my brain is kind of going "You can't go there."

References

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