

Building Positive Attitudes to Numeracy

Maths anxiety in adult numeracy students

Many students involved in adult basic education experienced failure in the school system and lost confidence in their ability to learn. This was particularly true of mathematics learning. Teachers of adults meet many students with very little self confidence, who are convinced that success with numbers is beyond them. Some, in fact, experience real fear when confronted with anything to do with mathematics. This syndrome is more widespread than most people realise and has been described as 'Maths Anxiety': a feeling of panic, helplessness and mental disorganisation that arises among some people when they need to do something that involves numbers.

What causes Negative Attitudes to Maths?

Many adults have negative stories about their experiences with maths. From listening to these stories it seems that most negative feelings about maths have their origins in school classrooms of the past, and sometimes even in the home. A lot of educators believe that it is the abstract nature of mathematics and the unimaginative methods used to teach it that have caused negative reactions in so many students.

Traditional mathematics classroom practices

In school mathematics most people were taught mathematical skills by completing pages of repetitive examples, often with no immediately obvious application.

It was usually taught in a competitive manner where collaboration was seen as cheating, rather than, as nowadays, a valuable opportunity for cooperative learning.

Emphasis on the right answer, rather than on the process of problem solving, and on memorisation, rather than understanding, made learning a difficult and alienating process for many. The 'sums' to which the teachers applied magical rules were impersonal and unrelated to people and human concerns, and had little to do with students' own lives and experiences.

Teachers generally relied on abstract and verbal reasoning to explain mathematical processes. This disadvantaged students who would have benefitted from visual and tactile experiences that could be provided by pictures, diagrams and 'hands on' materials.

In a traditional teacher-dominated classroom, students were expected to be silent and so were also denied valuable opportunities to learn through discussion and talking about their understanding and related experiences.

Timed tests, competitive arithmetic quizzes and the pressure to keep up with the rest of the class often created anxiety and blocked students' ability to think clearly.



For some these shortcomings in teaching methods have been made worse by teachers belittling them in front of the class for their mistakes, forcing them to the board to do problems which they obviously did not understand, even hitting them as punishment for wrong answers or untidy workbooks.

These humiliations, and the hours of sitting in classes, feeling stupid, understanding little of what was said, are not forgotten by our students. The anxiety provoked is brought into any new maths or numeracy class. So adult numeracy classes must be different from the traditional mathematics' classes in students' memories. These differences need to be clear from the very beginning.

Building a Positive Attitude in your Numeracy Class

We recommend that any new numeracy course starts with an opportunity for students to share their past feelings about mathematics and their current feelings about learning it again.

The following activity, *Sharing Attitudes to Maths*, is one way of achieving this sharing. It also suggests methods to find out about students' numeracy strengths and weaknesses as well as the skills they want to learn.

This should be quickly followed by activities which will allow students to experience immediate success and/or have some fun in their first numeracy class. Several activities, such as games, puzzles and group and pair activities are suggested for this purpose. They are included in the remainder of this *Getting Started* section.

Why does it matter? - A barrier to opportunities

Lack of numeracy confidence is an important issue because a lack of numeracy skills limits people's choices. Mathematics-based selection tests are widely (and often inappropriately) used by employers and institutions offering courses of study, even when the job or course does not necessarily require mathematical skills. Applicants who fail the tests, or who do not even take them because of their fear, are filtered out from the maths literate and lose the chance to participate in a wide range of occupations.

In the past, when mathematics was seen as a male 'unfeminine domain', women were particularly disadvantaged by mathematics being used as this 'critical filter'.

Their negative attitudes to the subject were seen as 'normal' and they were not encouraged to persevere, thus excluding themselves from a lot of courses and well-paid jobs. The absence of positive female role models further reinforced their traditional choices. A lot of work has been done in schools to change these attitudes over the last few decades. It remains to be seen whether this situation has changed as a result.

