Facts:

786,000

the number of people on adult and community learning courses in England in 2005/06

60 %

of people disagree that *"most people don't understand what vocational qualifications are"*

5 million

the number of students in further education in 2004/05. Nearly three times as many as in 1970/71

4 times

the number of female FE students in 2004/05 compared with 1970/71

Vocational courses: opportunities for enhancing students' understanding of maths?

Numeracy is a requirement for anyone entering the workplace or seeking to advance their career. But many struggle to achieve even basic maths qualifications. Would capitalising on students' interest in vocational subjects such as agricultural mechanics, horticulture and automotive technology help?

An American study that set out to develop and test a model designed to improve students' maths skills through vocational courses found that it helped them to learn mathematical concepts which they had been unable to grasp in the traditional maths classroom. And making time to focus on maths didn't limit the students' acquisition of technical skills and knowledge. Students improved their understanding of maths to the extent that they achieved higher on standardised maths tests. How was this achieved?

Vocational subject tutors worked with their maths tutor colleagues to identify maths concepts inherent in their curricula and devise lesson plans. The vocational subject tutors helped their students to make links between mathematical concepts through a series of seven carefully planned steps that began with an introduction to solving a real, relevant problem; proceeded with students practicing with several similar examples and ended with students applying the concept they had learned to a more abstract problem.

For example, how to ensure that a building had 90^{o} (square) corners involved introducing the mathematical formula and terminology of the Pythagorean theorem. Having been walked through the problem, the students were asked to solve other construction problems using the same theorem.

20%

of people agreed that “only people who can’t do academic qualifications should do vocational ones

11%

the proportion of 16 year olds in full-time education in sixth from colleges in 2005

Source: Social Trends 37

But the programme was more than just the seven teaching elements. The essential feature of the model was the teamwork between the vocational subject tutors and their maths tutor partners to identify the maths concepts embedded in the vocational subjects and develop the lessons together.

How could joint curriculum planning help you to make more effective use of the distinct, specialist knowledge of maths and vocational tutors?

Stone, J., Alfeld, C., Pearson, D., Lewis, M., & Jenson, S. (2005) Building academic skills in context: testing the value of enhanced maths learning in CTE: www.nccte.org/publications/infosynthesis/r%26dreport/MathLearningPilotStudy.pdf