

Learning Mathematics in context

Colchester Institute

Case study – using digital images

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Colchester Institute is a large college of further and higher education that offers a wide variety of vocational programmes ranging from Entry to Employment to Foundation degrees. It has an active network of Subject Learning Coaches (SLCs) who have the support of senior managers. The SLC Forum, as it is known, has a budget for materials to support professional development sessions and the members of the Forum are given remission to support other staff. There is an established tradition of collaboration in teaching Mathematics in the context of vocational programmes.

Julia, the SLC for Mathematics, worked with vocational teachers* in the Construction department to develop the approaches to teaching and learning that are encouraged by the Improving Learning in Mathematics (ILIM) resource. Julia had already experienced the success of ILIM activities in vocational contexts and wanted to develop and trial new learning activities in new contexts.

We use 'teaching and learning' and 'teacher' as generic terms to include:

- teaching, training and learning teachers, tutors, trainers, lecturers and instructors in the further education (FE) system.

One of these activities used digital images to focus learners' attention on the mathematics that could be identified in the workplace. Julia and her colleagues developed a version of this activity to use in an introductory course for learners who were uncertain about which vocational area they wanted to work in. This took place at the end of the summer holiday,

At first, Julia chose images from a variety of vocational areas and invited learners to identify the mathematics that they thought would be relevant to the situation shown in the image. However, when the activity was trialled, it became apparent that the session was more effective when the learners were given the opportunity to choose their own images to work with. Subsequently, both versions of the activity were used. A measure of their success is that they are likely to become standard practice for induction sessions across the college in the next academic year.

When asked 'What made the session enjoyable?' learners' said:

'Looking carefully at the picture, it wasn't all pen and paper'.

'Thinking about how we could help and teach the children [mathematics in the playgroup]'.

'I think that this is a good activity because it helps to discuss and listen to others and it helped me to know about childcare'.

'Knowing that I already have some of the [mathematics] skills'.

A vocational teacher said:

'I think this is a great activity to use with students so that they can see for themselves the numeracy skills they need. This is better than tutors telling them!'

Another teacher gave the session a positive endorsement with the comment:

'They wanted to do it for longer!'

Lessons learned

- Where a network of Subject Learning Coaches is given support by senior management, their contribution to improving teaching and learning is more effective. As Julia said:

'I believe that there is a direct correlation between improvements in achievement and the existence of the SLC Forum'.

- A teacher who becomes a Subject Learning Coach for Mathematics should become familiar with the resources in Improving Learning in Mathematics and Thinking through Mathematics. This makes it easier to adapt existing activities to match this approach and so extend the range of vocational areas where Mathematics teaching is effective.
- Vocational teachers can work with their SLC for Mathematics in a 'supported experiment' such as the teachers in this project have done.

See Julia's reflective journal, which includes an example that shows the kind of mathematics topics that learners identified .