THE NECESSITY OF DIVERSITY

Tony Cotton

I spend a lot of time in Drama classrooms. It is of interest that such classrooms demand diversity. The drama teacher would not be able to operate effectively in a ‘setted’ group. She needs a range of skills and abilities in order to allow creative and effective drama to take place. The classroom I visit also gets the ‘best’ grades in the school often from pupils who are described in other subjects as ‘les able’. It is the clash between the common-sense view of the drama classroom and the maths classroom that engages me most. Is it an epistemological question? Is it to do with the aims of the two disciplines? Is it that Drama teachers may hold different beliefs about education from many maths teachers? So allow me to play with this for a while and describe a fictional assessment in mathematics education based on the exam that the Drama pupils I work with will be facing in a few weeks.

The scene is a Y11 Mathematics Group. The group is an all attainment group - although this would not be a description the learners would recognise. For this group in this school it has always been the case that all pupils are taught in tutor groups by teachers who remain as the focus teacher for that group over their whole time in school. The school imported this idea from a school in Denmark which the staff and pupils are regularly in contact with. Although they rejected the idea of one teacher covering the whole curriculum with their tutor group they have worked hard at constructing a timetable based around 'focus' specialists.

On our visit the group are engaged in their end of secondary phase mathematics assessment. This takes place over a full week towards the end of the last term in school. It is a process they are used to as a similar process has taken place at some stage during each year of their time in school. Around the walls of the classroom are the assessment criteria - these consist both of process criteria and content criteria. Examples of each are:

You must show that you can trial and evaluate a variety of approaches to solving a task and break a complex problem down into a series of tasks.

You must present your ideas clearly showing you can use diagrams, symbols and graphs to explain your solutions.

You need to show evidence of effective and efficient use of calculators and computers.

You need to show your understanding of fractions and percentages.

The pupils are engaged on a series of extended tasks, which lead to a series of outcomes. Day 1 ends with a programme of student presentations. Day 2 begins with pupils spending some quiet time evaluating their contribution to these presentations before they move into another group activity, in a different working group. This activity requires each group to produce a booklet summarising the main points of an area of mathematics that deals with shape and space. During the third morning individuals work with one of these booklets looking for errors or inconsistencies and suggest improvements. The group are used to working in this way as these booklets are often used as learning aids at all stages of their mathematics learning. (I will try this idea – I’m always looking for ‘active’ revision activities.) During the afternoon the pupils work in a third group on a series of statistical data collection, representation and interpretation activities. They are also handed the individual test papers which they will sit on the final afternoon - this is to help them prepare and to support them in selecting the appropriate notes and materials

they wish to bring into the paper. The data handling activity comes to end at the end of day 4. Day 5 opens with the test paper - this focuses in particular on what has become defined as 'numeracy' by the government of the day. The final afternoon is taken up by each individual pupil preparing a personal portfolio gathered from the activities of the week. This portfolio is the evidence used to give evidence of achievement measured against the explicit criteria which the pupils have seen on the walls all week but which they are also used to working to constantly.

During the week a moderator from another local school has been present during two afternoons to offer advice to the class teacher and the pupils as to the judgements which are being made. All teachers are trained moderators to ensure that consistency is seen to be applied across schools. Both teacher and moderator can be seen encouraging pupils throughout the week to revisit parts of their work to give evidence of mathematical skills they have but have not shown during a particular activity.

The teacher draws up a series of marks from the pupil portfolios corresponding to the criteria. Each area of mathematics is marked out of 8. This mark corresponds to the level the pupil has shown evidence of operating at during the week. There are 5 areas, which correspond to the discrete areas of the National Curriculum.

These marks then go forward to an exam board at which the pupils are graded. The pupils are aware of the grade the teacher is expecting from the marks which are sent forward and the final grades awarded before the pupils leave school so they can be involved in any discussion which takes place around borderline candidates.

Tony Cotton

Nottingham University