

Examples of use of ICT in Subject Methodology Sessions

In these sessions the tutor is mirroring the teaching the trainees may be doing in schools. It is important to get the trainees to consider why ICT is being used and whether this is a good use of ICT. Below are a couple of examples, from Keith Ross, of how ICT is used in sessions

“Primary example

In a session on Materials we try to show that objects and materials are different. You can have a plate made of glass, wood, metal plastic etc, and you can use metal to make a plate a cup and a spoon. I have 4 plates, 3 cups and 3 spoons, made of some of the following: wood, glass, china, plastic and metal.

I have a simple database programme on the whiteboard, and each student (modelling children's behaviour) writes their name (omit this if time is at a premium), and clicks on which object (of 3) made of which material (of 5).

I then get the students, holding their cup, plate or spoon, to make a human bar chart, and show that the computer can also do the same. We then repeat the process for the 5 materials. It shows the distinction between an object and its material, and illustrates the value of using a computer to make bar charts (though humans are not bad either!)

Secondary example

pH concept - using a pH probe to watch as .1M acid is run into .1M alkali, to show that 9/10th of the alkali have to be neutralised before the pH drops by one unit, 99/100th for the next 1 unit change, and so on so that the pH changes extremely rapidly as the neutralisation point is approached and passed. Logarithmic scales need to be experienced - they are deceptive (see in Chapter 11 “When we start to use numbers” p.85 of “Teaching Secondary Science” Ross, Lakin and Callaghan, David Fulton 2004)”

Listed below are some brief examples of use of ICT in methodology sessions with some of St. Martin's Undergraduate trainees.:

Rates of Reaction: As part of a session on this topic, a mass sensor is used to follow the rate of reaction between a carbonate and acid.

Forces:

- i) Light gates are used to measure velocity and acceleration of objects. Trainees also use ticker timers and comment on the advantages / disadvantages of the two methods.
- ii) A position sensor is used to monitor oscillation of a spring as it is gradually loaded up with masses.

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Metals and Non-metals: A CD-Rom is used to show examples of reactions which may be difficult or too dangerous to do in school e.g. the reaction of caesium with water.

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