Who Wants to be a Millionaire? Or Using Personal Response Systems in Teaching

Do you ever, when standing in front of a room of expressionless faces, wonder how many of your students are with you, how many gave up after the first five minutes, how many have heard it all before and how many are actually asleep?

Personal response systems (PRS) are small, hand-held devices, sometimes known as zappers, which allow you to instantly survey understanding and adapt your teaching to cater for even the least responsive classes. They also have a variety of other applications which can make teaching more interactive and help with assessment and feedback.

In Chemistry we have been using PRS handsets regularly in lectures for over 12 months. Through a Hefce initiative, Chemistry for our Future (CFOF), we have been fortunate in being able to appoint a Project Officer to investigate the potential of personal response systems and evaluate student perceptions of them.

The main environment in which we have used the handsets is in Foundation Year and first year lectures. Having outlined a theory or principle the lecturer can pose some basic questions to the class. A few carefully placed multiple choice type questions during a Powerpoint presentation can instantly give feedback to both lecturer and class on levels of understanding. In this mode the handsets are used anonymously so students are not afraid or embarrassed to answer. It not only gives students a way to test their understanding but also provides a natural break in the lecture which helps them focus on the next topic. Student evaluations of PRS use in this way are uniformly enthusiastic with comments such as ‘immediate feedback on what I didn’t know, helped target my learning’ regularly received.

PRS can be used in a similar way at the end of a set of lectures, or for revision, when a short review test can be set to gauge knowledge and understanding. This type of use is termed ‘anonymous’ and is also suitable for conducting student evaluations of modules quickly and effectively at the end of a lecture course.

Handsets can handle a variety of question types, including those requiring the input of numerical answers; although to get the mark, figures must agree exactly with the stored answer.

Of course the handsets are also great fun to use in UCAS Visit and Open Days or in Schools’ Outreach Activities, as they emphasise the reputation of the University as forward thinking in e-learning.

We have recently been investigating PRS use for summative as well as formative assessment. In the ‘known’ mode students input their student number into the handset and answer a test which can be displayed either using Powerpoint or on paper. In tests conducted up to now students have carried out a multiple choice test answering on a response sheet in the usual fashion. They are then invited to input their answers to each question into the handsets as a class. This takes a matter of a few minutes, depending upon the length of the test and the size of the class. The answers are marked instantly and the results can be exported in a variety of forms either directly to Blackboard, as an excel spreadsheet or as a pdf. The results can be displayed in a variety of different ways. We allow students to view their own responses on
Blackboard, along with the correct response. In this way students have access to instant feedback and can compare their mark with the class average.

When used for summative assessment there are obviously issues which must be addressed such as confidentiality, familiarity with the handsets, accuracy of responses etc. By collecting paper response sheets at the same time we can compare marks from both modes of answering to check on accuracy and reproducibility of the results.

PRS receivers and handsets are available in various lecture theatres across the campus. A laptop or fixed PC can easily be adapted for use with the system by attaching a portable receiver and borrowing a box of handsets. The software, Interwrite, is loaded on the University network and can easily be downloaded and installed onto PCs. CSTD run training sessions on use of the system and Liz Tracey, the Chemistry Project Officer, would be happy to help anyone getting started. We would also be interested to hear about any other tested applications of PRS usage in teaching and learning across the University.

I can guarantee this is a proven way to find out if any of your students are actually asleep.

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PRS receivers are permanently installed in the following lecture theatres:

- Palmer G10 & 109
- Agriculture Madejski & Nike
- Chemistry LT1 & LT2
- URS LLT & SLT

Handsets are available for loan from IT Services and these can be delivered to the location of your lecture.

An email list (prs@lists.reading.ac.uk) has been created for PRS users. The PRS mail list home page is: www.lists.reading.ac.uk/mailman/listinfo/prs