



HEA Pathfinder Briefing Paper: Using a Personal Response System (PRS) for Teaching & Learning in Higher Education

Intended Audience: Academic and support staff in Higher Education

Introduction

A Personal Response System (PRS) is also referred to as a Student Response System (SRS) or Clickers. Using such a system, students can respond to questions electronically and the lecturer or tutor can compile and screen the responses/results in real time.

A PRS is a form of technology that offers a lecturer the opportunity to ask a group of students multiple-choice, alternative-choice and other types of 'objective' questions to which they reply individually by selecting a response on a hand-held wireless transmitter. A receiver connected to a laptop/computer receives these answers. The installed software programme on the laptop/computer then aggregates the responses, and the students can observe the results on a projection screen. Hence, there are similarities with the technique of "asking the audience" on the game show *Who Wants to be a Millionaire?* (Elliot, 2001).

Clickers can be used to gauge student opinion on controversial or sensitive issues. They are often used to catalyse debate and discussion, turning a passive lecture into an interactive exchange. In the case of our Brunel Pathfinder ENTICE project, they were used to obtain and share student evaluation responses. And significantly, students say they are fun! (Educause, 2005)

How was PRS used in the context of the Brunel Pathfinder ENTICE project?

A significant strand of the Pathfinder ENTICE project involved evaluating e-learning provision from the student perspective. To this end, the PRS offered by Interwrite Learning was considered the best option to collect student feedback. The system offered a variety of advantages compared to a traditional paper-based or online survey:

- Higher response rate compared to traditional online surveys
- Particularly effective for larger cohorts of students
- Reduced risk of misinterpretation of questions ...validity of responses is highly improved.
- Available option to keep responses anonymous
- Response results can be displayed immediately after all answers to a question have been received
- Response data integrity is guaranteed
- Detailed reports for analysis can be retrieved instantly.




The evaluation of Brunel's e-learning provision was conducted by means of 'value-practice' analysis (as used by CARET at Cambridge University). Using a PowerPoint presentation, students were presented with a screenshot of the use of particular tools or features of the VLE to contextualise the question. The first part of the question asked how valuable students found the particular practice. The second part of the question asked how frequently they would like to see the practice used as part of their e-learning provision.

Students were able to respond to the series of multiple choice questions displayed by selecting the relevant option on the clickers distributed to them. A graph highlighting responses was subsequently displayed on the projection screen, as in the example below:



RF Class: ANU_EVPRS <-6> Joined: 5

How would you rate the pace of the session?

-  A. Too slow
-  B. Just right
-  C. Too fast

Graph appears & displays responses

InterWrite PRS - Response Chart

Close Chart 1/2 [as View]

Correct Answer: None Correct: 0% Incorrect: 100% # Invalid: 0

Response	Count
A	1
B	2
C	1
Invalid	0

u-Link **QUESTION 2** **Brunel UNIVERSITY WEST LONDON**

A PRS 'clicker' and an example of a generated feedback graph

What other applications does a PRS have?

Aside from evaluation, a PRS may also be used for formative assessment purposes. It may be used to gauge students' understanding midway through a lecture, for example. One may also identify responses to inform a more 'formal' type of assessment. A variety of question types may be used (for example, multiple choice, true/false, numeric, short answer, multiple correct, rank order, decimal point, fractions and positive/negative numbers).

Considerations for use

- Conduct research regarding the cost of equipment and maintenance of PRS clickers, as well as appropriate budgetary allocation
- Staff training is required in order to understand how to set up and utilise the system
- Plan for time prior to PRS sessions to set up the equipment
- Ensure that the lecturer has appropriate backup technical support
- Security of the clickers must be considered; implement measures to ensure that all the distributed clickers are safely returned to the lecturer following the session.

References of interest
Educause website http://www.educause.edu/eli
Elliot, C. (2001). Using a Personal Response System in Economics Teaching. International Review of Economics Education , 1(1), 80-83. Available online at http://www.economicnetwork.ac.uk/iree/1/elliott.htm#refs
Interwrite Learning website http://www.interwritelearning.com/products/prs/radio/detail.html