Chapter 10
Effective Implementation of Learner Response Systems: Moving beyond the Right Response

Diana Bannister  
University of Wolverhampton, UK

Andrew Hutchinson  
University of Wolverhampton, UK

Helen Sargeant  
University of Wolverhampton, UK

ABSTRACT
This chapter is based upon research from the REVEAL Project - a REVIEW of Electronic Voting and an Evaluation of Uses within Assessment and Learning. The REVEAL Project was a two-year development and research project across the UK funded by the Bowland Charitable Trust, (UK) that focused upon understanding the effective use of one of Promethean’s Learner Response Systems (LRS) called Activote, across seventy primary and secondary schools within eleven local authorities. Led by the Learning Technologies Team, Midlands Leadership Centre, University of Wolverhampton, the project aimed to define and disseminate best practice in the use of Learner Response Systems, highlighting key uses and creative ways of working. This chapter summarizes the key themes and findings that have emerged from the project, providing an overview for teachers and practitioners including a suggested model of implementation for the Learner Response Systems. The work from this project would be beneficial to developments on classroom interaction and collaboration as well as teacher training and related continuing professional development for the effective use of interactive technologies within learning and teaching.

INTRODUCTION
During the last decade, teachers have been faced with an abundance of technology. While some embrace the latest equipment and quickly move on to the next kit, others are keen to embed the use of technology within their practice. The interactive whiteboard first appeared in UK classrooms in the late 1990s, but more than ten years later, it has taken considerable...
investment to demonstrate consistency and the full potential of whole class interactive technologies. Consequently, peripheral devices have received a similar reception, schools have bought or loaned learner response systems, but there is work to be done to ensure that they can be successfully integrated across different institutions. Teachers need both training and continuing professional development to determine whether such technologies are fit for their intended purpose, or indeed if there is another approach available.

Some teachers are confident enough with their own abilities to start with the technology and decipher the technical jargon. With most new technologies in the classroom, a framework for effective use is developed long after the initial experimentation from the teacher. This means that the teacher’s use of the technology can plateau quite easily and in some cases, leads to lack of use rather than progress. However, in order to achieve the balance of the pedagogy alongside the new technology, it would seem more appropriate to have a framework to follow. Regardless of the technology; it is always useful to have a guide for implementing ideas in the classroom.

Historically, Learner Response Systems have been designed around the concept of providing an audience with a simple multiple choice keypad that allows questions to be answered during a lesson or lecture. Response data is collected and projected via a graph or histogram and discussed within the group. Some manufacturers, such as Promethean, have created hybrid software that allows for the creation of lessons where interactive whiteboard and a learner response system are used seamlessly, together. Key classroom applications of the Activote system include use in supporting Assessment for Learning, for the engagement and motivation of students, to encourage interaction between teacher and learner, and peer to peer dialogue.

For the purpose of this development and research project, all schools had been identified by the commercial supplier Promethean (UK) and were using one particular system called Activote. At the time of this study Activote was the market leader in primary and secondary education within the UK, Europe, Africa and the Middle East (Decision Tree Consulting 2007). The multiple choice based learner response system is commonly sold in class sets of thirty-two devices to primary and secondary schools. It comes with a radio receiver and software that works in conjunction with an interactive whiteboard of any brand or ceiling mounted projector. Responses are collected by a USB radio receiver or a similar unit embedded in the IWB. Activote consists of a rubberized handset with six response buttons labeled A-F. Two other flashing panels inform the user whether their vote has been sent and received. Questions can be prepared in advance of a session, using a built in Question Master software application. This allows the teacher to input multiple choice options, set correct answers, give a time limit or countdown and add other resources to the displayed page.

The Activote device also allows for spontaneous questions where the teacher can write a question with a pen onto the interactive whiteboard. The software provides question template pages, that a teacher can click to edit and voting clipart images in the form of labeled Venn diagrams, Likert scales or Carroll diagrams, which can be dragged onto the screen and used on the spur of the moment. Teachers can use ‘Voting’ button images to drag and drop onto diagrams or pictures before asking questions. Advanced users have also been observed to use the system to gain responses to spontaneous verbal questions that they pose.

Following each question a data panel appears. Response data can be displayed in a variety of formats, these include:

- Answers in a graph (A-F)
- Who answered what?
- Right / Wrong (pie chart)
- Response Summary (all questions asked)
- Overall scores
- Response times
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