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Using Personal Response Systems for induction

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In the autumn term of 2006 the business and economics subject team at Warwick University decided to try a slightly different approach to library induction for undergraduates. We wanted to keep our sessions brief, firmly believing that not much is retained by students from induction sessions, and we wanted a session that would not just be a brief introduction to services. Drawing on a colleague's experience we decided to focus on one specific problem we know students face early on in their course, namely understanding what they are looking for when they see references on a reading list. This had worked in a presentation format with quite large groups and included an element of interactivity. Having seen the Personal Response System (PRS) technology showcased on Warwick's e-learning website, we felt this might enhance the interactive element so arranged for a demonstration of the system in the library. PRS is used extensively by the medical school within lectures and is used to great success in revision sessions, especially when used in a competitive team environment.

This technology has been in use in other universities and disciplines for a while, including within libraries such as Birmingham University, as listed in their BRUM project[1] and Leeds University as detailed in the last issue of *SCONUL Focus*[2]. A brief scan of the literature suggests views are predominantly positive about its value in engaging students and adding interactivity into lectures. The technology seemed simple enough, so we decided to build it into the undergraduate induction sessions as a trial.

How does it work?

PRS uses handsets and 'ask the audience' software to elicit anonymous answers from participants. As in the television game show 'Who wants to be a millionaire', participants each receive a handset and are asked to vote on a set of answers. The TurningPoint[3] software used at Warwick, once installed on the tutor PC, creates a toolbar within a PowerPoint presentation to enable slides to be created to interact with the handsets. Once each person has pressed the option of their choice the results of the voting are displayed on the screen for all to see. The next slide indicates which is the correct answer. PRS can be used to assess confidence levels and knowledge levels (pre- and post-training). One of the most attractive aspects, for us, was the belief that everyone in the audience could participate and (due to the anonymity offered by the technology) that everyone in the audience would participate. This active learning approach was felt to be a strong pedagogical reason for using the technology.

Was it easy to use?

As with all technology, the PRS took a little getting used to, but was relatively straight forward. Warwick has over 400 handsets available for booking by academics. Most of the PRS sessions were delivered to small groups of 20 students in library training rooms, but PRS was used in the session to 400 business school undergraduates in one of the large lecture theatres. For the large lecture extra help was needed to hand out the handsets and collect them back in, and we requested technical support for that session. Each session lasted about 20 minutes, although more time had been allowed. Lisa Foggo and colleagues[4] felt it important to allow 30 minutes set up time. Where the software was already installed on the PC our experience suggests this is not always necessary but – as with any software – allowances need to be made for a reboot of the PC if the handsets cannot be recognised.

The presentation was also fairly straightforward to create. Our presentation was based around helping students recognise references to books, journal articles, chapters in books (something we have found many students, even at masters level in term 3, have trouble with) and websites. We included a slide that made them think about assessing resources and websites for quality and also one to encourage them to ask for help from library staff rather than spend a long time looking

for information themselves. The first slide can be seen below.

Fig. 1: Slide from undergraduate induction presentation

What did we learn?

- **PRS does add interactivity and encourages participation**
  In creating the presentation we originally included a joke option on each slide, but on reflection we reduced this to the first slide only as we didn't want to give the students the opportunity to sabotage the presentation by voting for the joke option each time. The initial joke broke the ice and relaxed the groups. We learnt that it was better not to wait every time for 100% response before moving on – it was better to keep up the pace of the presentation, but in fact most students participated on each voting slide. This is in stark contrast to former induction presentations where only a few confident students would respond to questions. As Hoffman and Goodwin[5] found, the handing out of the handsets or 'clickers' also encouraged a good rapport between the library tutor and students, interested in knowing what was to follow.

- **Focus on the learning, not the technology**
  The first two sessions, run simultaneously, produced the same feedback from each library tutor: asking the students to vote on one slide after another began to pall and students seemed to lose motivation (back to the usual induction scenario we were trying to avoid). It was decided to intersperse each voting slide with a live demonstration of the relevant point in the catalogue to break up the effect of the PRS. This worked well, as did asking students why they had voted in a particular way before the correct answer slide was put up. Interestingly, students were more forthcoming to respond to these

questions than in previous induction sessions. Maybe when students can see that they are not alone in answering one way they feel more confident to explain why they came to that answer? Steve Draper[6] sees the ability of the technology to initiate a discussion as one of its more important applications and highlights the 'mathemagenic' (conducive to learning)' properties of 'having to produce explanations and reasons'. The slide on evaluating sources provoked most discussion. It posed a question where there was no right or wrong answer and it was interesting to see what assumptions students made. An interesting extension to the use of PRS is recommended by Wood[7], where it is used in conjunction with the Mazur model of peer instruction[8]. After an initial vote, students are paired up and each student has to try to convince the other that their choice of answer is right. In a follow up vote, most students give the correct answer.

- **PRS provides feedback for tutors**
  One of the biggest attractions of PRS for the tutor is that he or she can see very quickly from the displayed results how much the students know or understand and can address misunderstandings accordingly. PRS offers 'focus and direction' (Simpson and Oliver[9]). Where a high percentage of the class vote correctly, it is obvious immediately that the question is not challenging enough and needs to be amended. In our case, the citation to the website was too easily identified by each of the first few groups so a decision was made to take the voting off that slide. This also helped reduce the voting fatigue mentioned above and reduced the risk of making the students feel as if they were being patronised.

  It is interesting to note that in some US universities (Nebraska, Arizona, Colorado and Wisconsin-Madison, for example) students are asked to buy a handset at the beginning of their course (often part refundable at the end of their course), and the voting is part of both formative and summative assessment as a particular handset is identifiable to a particular student by the tutor. Problems with individual handsets not working may cause problems, students need to remember to bring their handsets to a session, plus they need to be familiar with the technology if taken to this level.

- **PRS provides anonymous feedback for students**
  The distribution of the results is displayed for the students too, so each one can see how they compare to the rest of the group and seeing they are not alone in answering wrongly seems to have a positive effect. The anonymity afforded by the use of PRS means students can answer without having to 'lose face'. This is something international students are particularly keen to avoid. Beekes[10] found PRS useful in engaging students from particular cultural and education backgrounds, concluding that the PRS 'appeared to enable them to overcome their inhibition and lack of confidence to contribute to class discussion'. We did not observe this in our undergraduate induction but it would be interesting to use PRS with masters groups with large contingents of international students with a view to encouraging participation.

WOULD WE USE IT AGAIN?

Yes. PRS is great for involving your audience. We felt the session was well received and some students even quoted back to us information on the slides when coming in to ask for help, suggesting that at least some of the information had been retained and that the main message of seeing us as approachable and there to help had been conveyed. If handled well PRS can help build a rapport with your group and can make library sessions fun for both the tutor and the students. It is possible to save results to assess and compare each group and to fine tune future sessions based on the information given. The technology is fairly reliable, but it is advisable to practise with it first. It needs to be used carefully: as with any learning technology, how it is used determines how well it is received. As Simpson and Oliver point out, 'the adoption of technology does not 'cause' good teaching'[11] and the interactive element may be a little daunting for the inexperienced tutor, but this technology, for us, was a relatively easy way to add in fun and interaction to a topic that often doesn't engage students. We need to carry out more extensive use and evaluation of the effectiveness of the technology to ascertain whether it is worth purchasing a number of handsets for the smaller group sessions, to ensure no booking conflicts occur. But this is fine tuning for an excellent technology we plan to use again for induction as well as introduce into post-induction sessions and information literacy programmes, to assess

starting knowledge levels and provide formative assessment.

NOTES

1   BRUM (Birmingham Re-usable Materials) http://www.is.bham.ac.uk/blasst/brum.htm
2   Lisa Foggo, Susan Mottram and Sarah Taylor, 'Ask the audience: e-voting at the University of Leeds', *SCONUL Focus*, **38** (summer), 2006 pp 41-43
3   Available from: http://www.turningtechnologies.co.uk/
4   Lisa Foggo, Susan Mottram and Sarah Taylor, op. cit.
5   Christina Hoffman and Susan Goodwin, 'A clicker for your thoughts: technology for active learning', *New library world*, **107** (1228/1229), 2006 pp 422-433
6   Steve Draper, Electronically enhanced classroom interaction, 2002 [WWW document] http://www.psy.gla.ac.uk/~steve/ilig/handsets.html Accessed 7 December 2006
7   William B. Wood, 'Clickers: a teaching gimmick that works', *Developmental cell*, **7** (6), 2004 pp 796-798
8   Eric Mazur, Peer instruction, http://mazurwww.Harvard.edu/education/ Accessed 7 December 2006
9   Vicki Simpson and Martin Oliver, Using electronic voting systems in lectures, http://www.ucl.ac.uk/learningtechnology/assessment/ElectronicVotingSystems.pdf
10   Wendy Beekes, 'The 'Millionaire' method for encouraging participation', *Active learning in higher education*, **7** (1), 2006 pp 25–36
11   Vicki Simpson and Martin Oliver, op. cit.