

## A Research Case Study: Using Thunder™ to increase student involvement in History seminars

Dr Brett Bligh discusses some of his research case studies into the use of interactive flipchart system Thunder™.



The Thunder™ system in the Dearing Education Building on Jubilee Campus

### The Purpose

The purpose of the initiative was to determine whether student involvement in seminars could be improved by the use of planned, technology-supported scenarios, and to assess the quality of the interactions which were fostered as a result of the scenario designs.

### The teaching and learning context

The School of History at the University of Nottingham has been taking strides to develop its educational technology base because this is seen as a mechanism for increasing student interest and improving involvement.

### The technology

The Thunder™ system used as the basis for this research was originally developed for business use and appropriated for use in educational settings by the Visual Learning Lab (VLL). The purpose of the technology is to allow the display of many pieces of information simultaneously, using the concept of "flipchart pages" which are displayed by multiple projectors and controlled by a central easel. The Thunder™ system also replicates the easel interface on the tablet PCs (image to the left). This allows free-form interaction such as the writing of notes, drawing of diagrams and contribution of pictures to occur from the learners' seats.

### The Process

A tutor from the School of History who did not consider herself technology-confident, was

## Visual Display Systems

introduced in a **scaffolded** way to Thunder™. A series of learning scenarios were developed jointly between the research team and the tutor, after which the tutor put each scenario into practice twice, with two parallel tutorial groups. We discussed scenarios which took into account both the needs of the module and the capabilities of the technology. Four seminar scenarios were eventually put into practice, across eight teaching sessions, two of which are discussed below (For an un-edited version of this research case study, including all four scenarios please see [http://www.nottingham.ac.uk/courses-office/thehub/The\\_Hub\\_Spring09.pdf](http://www.nottingham.ac.uk/courses-office/thehub/The_Hub_Spring09.pdf)).

### At a glance: What is scaffolded learning:

In scaffolded learning, students are given the most assistance when they approach a new or demanding learning objective. As they increase in confidence and skill, the student receives less and less support so that gradually they assume ownership of the knowledge or skill associated with the learning objective for themselves.

### Scenario one – ‘asynchronous communication’

The first session was based around the notion of asynchronous small group communication. We introduced the Thunder™ client to the students, loaded onto the tablet PCs. Students were divided into three groups and asked to consider, within the groups, factors in the rise of Stalin. During this activity, of approximately 15 minutes, no conferring occurred between

the groups. Within the groups, students either typed notes into a word processor, or drew them freehand using the tablet PC software. At the end of the activity, each group sent its notes to Thunder™ simultaneously. A plenary discussion was held, in which the tutor was able to identify the common threads in the students' work and to point out the differences in perception of the material that were apparent.



### Scenario two – ‘synchronous communication’

The second session comprised two distinct tasks. The first task asked the students to draw non-mimetic representations of “liberal democracy”, with Lissitzky's famous 1919 lithograph Beat the Whites with the Red Wedge as an inspiration. The second task, meanwhile, built upon the previous session and required student groups to consider the factors affecting the different pre-war outcomes for liberal democracy in Italy, Germany and France. This time, however, the group communication was synchronous, meaning that each group could see the work being undertaken by the other groups as it was happening, since the activity on the groups' tablet PCs was constantly projected on the wall.



Collage of student representations of liberal democracy

### Evidence of success

Our results showed a gradual increase in confidence with the system, which seemed to echo the inevitable increase in familiarity between members of the student group, and between students and the tutor. The group-work exercises worked quite well; students were able to discuss topics in depth during the breakout sessions and contributed significant sets of notes to the plenary discussions. Some student groups typed bullet-pointed notes into a word processor, while others chose to draw diagrams and hand write and utilised more colours in their presentation. Perhaps the aspect of these sessions which most confounded our expectations was that student behaviour in the two scenarios seems to be very similar. Video evidence seems to indicate that this might be because student attention, during the synchronous sessions, was directed inwards within the group, rather than outward at the multiple projected screens where the construction of work was being displayed.

The exercise involving the drawing of abstract diagrams by students proved controversial. At the beginning of the session, many of the students did not see the relevance of the exercise. After some persuasion by the tutor, students were persuaded to have a go. A few attempted artistic renditions of liberal democracy, while others utilised formulaic representations such as ballot papers. The ensuing discussion, however, proved to be a rich discourse about what constituted liberal democracy and what assumptions underpinned it, with some of the more stereotyped representations drawing considerable critical attention. Ultimately, the

exercise was seen to have been valuable by the tutor despite the divided opinion among the students!

### Outcomes

The most tangible direct outcome of the project was that the History tutor, Carole Mallia, was recognised for her innovative seminars by being presented with a University of Nottingham Postgraduate Teaching Assistant Award. After accepting the Award, Carole reflected on the aims of the initiative: "Working with Brett and the VLL team certainly helped me gain confidence in using unfamiliar technology, and has made my approach to learning and teaching more open and confident. Feedback from students was particularly positive in the potential for using the Thunder in seminar teaching, as well as for their own study and preparation. The fact that students were spending more time thinking



**Carole Mallia receives the Postgraduate Teaching Assistant Award from David Burns (Director of Training & Staff Development at SEDU), and Tessa Payne (Head of the Graduate School)**

and responding to others in seminars, rather than taking notes, seems to have been one of the most beneficial aspects for them, and was my main aim for participating".

### Transferability

While this work was based in History, it must be emphasised that the theories we used – of student involvement and the integration of technology, space and learners – were developed to influence the design of teaching and learning scenarios in a very general sense. Many theories of learning interactions are equally transferable. Our only pre-requisites for this project were interesting visual representations, and a willingness by tutors and students to engage with new technology-supported methods, which would inevitably have an impact on their classroom practice. In theory, this is applicable to a range of other subject areas. In practice, we are already undertaking similar sets of activities in conjunction with the Department of Classics and with the MA course ICT in Education.