VLE Pilot Project Case Study

Social Aspects of Science

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## Overview

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<tr>
<th><strong>Title</strong></th>
<th>Collaborative group work</th>
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<tbody>
<tr>
<td><strong>Pedagogic theme</strong></td>
<td>Group work, group tools, collaboration</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>Reflective practice; group work; online community</td>
</tr>
<tr>
<td><strong>Subject area</strong></td>
<td>Biology</td>
</tr>
<tr>
<td><strong>Student level &amp; profile</strong></td>
<td>Second year Biology students</td>
</tr>
<tr>
<td><strong>No. of students</strong></td>
<td>29</td>
</tr>
</tbody>
</table>
| **Key conclusions** | 1. VLE communication and sharing tools can enhance and facilitate group work, while still allowing students the flexibility to choose how they interact and organise themselves.  
2. Students engage more with VLE-based activities that are directly or indirectly assessed, as with this module’s online diary and group presentation (when compared with other modules).  
3. Links between class-based and VLE-based activities need to be purposely made to maximise the perceived value of a blended approach. |
Background

Social Aspects of Science is an assessed practical module for first and second year students in the Biology Department. The module examines the processes involved in traditional scientific methods and contrasts these with those used in quantitative and qualitative research in the health and social sciences. Ethical issues in research are also considered. Central to the module, students complete a short group research project, which involves designing and administering a questionnaire and interpreting the data. A combination of lecture series, workshops, and student-led group research culminates in group oral presentations on current contentious issues in science.

In the original module format, students attended lectures in Weeks 2–5, followed by workshops in Weeks 6–10 with presentations being made in the final workshop session. Group work was carried out by students meeting face to face within workshops and outside class. Students recorded their group work process in a paper-based diary which was submitted weekly and comprised 10% of the module’s assessment. The group presentation accounted for 50% of the assessment, while the remaining 40% required an individual summary report on the group’s data.

Pilot leader Emma Rand, who had previous involvement in the module, identified a blended approach utilising the VLE as a means of improving the group work process, by providing groups with a dedicated online space for sharing and in which their interactions could be recorded.
Description of approach

The VLE was therefore introduced to support the module’s group work process in parallel to the existing lecture series and workshops. It was also used to make available lecture outlines and direct links to focused electronic resources. The existing format of lecture series, workshops and the assessment task breakdown were retained.

It was anticipated and hoped that the dedicated group spaces (which included communication tools and file exchange) within the VLE would:

- better facilitate essential group work processes such as exchanging ideas and information; organising meetings and making decisions; and preparing and submitting the final presentation
- make each group’s process more transparent to the tutor, enabling improved monitoring of members’ levels of participation, and
- promote more reflective online diary entries, due to the diary’s transparency to group members and tutor as a result of its location within each group’s discussion board.
Learning activities & tools

The online component of the module included:

- Announcements
- Six dedicated group areas, each comprising a discussion board; file exchange facility; group email; and synchronous tools (the use of which was entirely optional). Each group comprised five to six members.
- Course synopsis including assessment schedule
- Lecture outlines and supporting external resources e.g. news articles
- Project titles for the group presentations e.g. deferred childbearing; crisis in sexual health; ethics of forensic DNA testing of employees
- Workshop resources e.g. Powerpoint guiding presentation preparation
- General discussion forums for academic and VLE-related questions
- Assignment submission facility for the upload of groups’ rehearsal and final Powerpoint files prior to the presentations.
Student profile

Students in this module completed the entry survey integral to a common VLE induction within the Biology Department (154 of 270 students i.e. 57% response rate). The data is therefore composite and only prominent trends are reported in the sections below.

Experience with computers

The overall entry survey results for Biology students (of which this cohort represents only 9.3%) indicate that students were established computer users with 81% accessing information on the web daily and a further 16% doing so frequently. Two thirds of students used synchronous chat daily or frequently, with a significantly lesser 19% posting to discussion forums daily or frequently.

Experience with computers for learning

Just over one third of surveyed Biology students had accessed online materials to support their learning, with 44% having previously used online quizzes for formative assessment. In contrast only 9% and 5% had used discussion boards and synchronous chat in support of learning, respectively.

Expectations towards the VLE

Expectations toward the VLE were positive. 90% of students agreed or strongly agreed that the VLE would support ideas and experience sharing amongst students. 94% of students were in agreement or strong agreement that the VLE would increase debate and discussion outside of class, while 85% agreed or strongly agreed that it would provide flexibility to learners in terms of their study needs.

Outcomes of the pilot

The module was delivered over the Spring Term 2006 (Weeks 2–10) with students attending a one hour lecture in Weeks 1–4 and then moving to two hour workshops during Weeks 5–10; the fifth being a rehearsal and the final the assessed presentation. Students were advised that the module would entail a further 34 hours of self-study. Feedback was collected from the tutor, Emma Rand, students and the VLE course statistics and tools.
Activity statistics

The group tools accounted for the vast majority of site usage (84%), and overall, the log-in frequency was high with all students logging in 50 times or more. The tutor was also a frequent visitor to the site with over 60 log-ins.

The group discussion boards revealed a per group range of 17 to 61 posts, with an average of 42 for the duration of the module. Three groups’ forums comprised upward of 14 student initiated threads – indicating a wide scope of discussion on diary entries; suggested resources; questionnaire development; and presentation preparation.

Four of the six groups used the file exchange extensively over the duration of the module, while the remaining two used it only in the final weeks for preparation of their PowerPoint file.

Focus group feedback

Module-specific feedback was gathered from a subset of 12 students at a focus group session conducted in March 2006 following students’ final presentations. Feedback was sought upon usage patterns, support for learning, the adequacy of training (see 5.5 below), and suggestions for future VLE use. Key themes are outlined overleaf.
1. Flexibility and convenience

In terms of use and access, the flexibility and convenience of the VLE was appreciated by students, with greater use being made nearer to the presentation date. Primary functions included organising meetings, exchanging files and making diary entries. Mention was made of the ease of access to resources in terms of location e.g. whilst on holiday and "...without having to look for stuff". There was general acknowledgement too that the module would have been more logistically difficult without the VLE.

Illustration showing Yorkshare and the webpage it has been used to launch

2. Relationship to class-based sessions

Students were largely in agreement that there was not a clear relationship between lectures and the group work:

"It was hard to see where the lectures fitted in... they didn’t really play a role in the group work. [They] seemed a bit pointless."

"[The lectures] didn’t seem initially related... it was the workshops."

One student went as far as to suggest that there should be some form of assessment attached to the lectures “like a little essay”. While there was some disagreement expressed to the suggestion, it highlighted the motivational link between assessment and students’ perception of the lectures.
3. Online communication

The general discussion forums set up to support students in the module went untouched. When probed, students explained that they tended to ask questions of the tutor at the weekly workshop. One student added that what they needed to discuss was only relevant to the group, so they used their group discussion board rather than the general forums. Another student explained a preference for email because “you know people will check their email”.

Exit survey feedback

Unlike the entry survey, the exit survey was specific to the module and selected results are presented below.

Table 1: Selection of results from the exit surveys

<table>
<thead>
<tr>
<th>Survey question</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>A VLE provides flexibility to learners in terms of their study needs.</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A VLE enables instructors to provide a wider variety of learning resources for students.</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A VLE increases interaction levels between students on the course outside of class.</td>
<td>2</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>A VLE makes individual students’ contributions more transparent to the instructor.</td>
<td>1</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>A VLE increases opportunities for discussion and debate among students outside class.</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

SA = Strongly Agree  A = Agree  N = Neutral  D = Disagree  SD = Strongly Disagree
Students’ comments in response to being asked how the VLE benefited their learning were in the main very positive, with a particular awareness of how it supported their group work:

“File exchange allowed rapid file exchanges, conveniently. Discussion boards meant people could ask things instead of emailing everyone. Email function allows easier emailing, instead of having to type in names manually. Online course materials useful so didn’t have to have notes on person all the time to do work.”

“It was really useful to coordinate group work. The file exchange in particular was useful as we could share documents with each other at weekends and when we were at home, not just on the Biology network.”

“Was excellent. Helped communicate with group members a great deal.”

“Felt that the VLE was invaluable in this particular module because of the nature of the work. It made discussion and communication of work between group members much easier. Being able to review a lecture PowerPoint proved useful.”

On being asked to agree or disagree and then elaborate on whether online activities in the VLE complemented students’ learning, there were contrasting responses:

“Worked well together.”

“No real class based learning going on, just informative talks not related to project.”

“We had access to all the course information, project titles, group members’ contact details at the click of a button which was really useful and helped with the organisation of the project.”

“This module did not really warrant VLE use other than to upload the presentations and use the ‘diary’. There were no real resources directly related to what we learnt.”

Despite these contrasts, the focus group and exit survey feedback highlights the centrality of the group project in students’ perception of the module. In this sense, the limited role of the VLE in the overall blend became more central by association as an enabler of the group work.
Instructor’s feedback

I thought that the VLE was very useful for group work and enhanced the ability of the group to function and made their activities more transparent to me. In particular, they made good use of the file exchange area and the discussion board. The diaries kept as a record of group meetings were more organised and more detailed than they had been in previous years. In addition, a few of them had several contributors whereas previous paper based diaries tended to be kept by one nominated member. It seemed to me that the diary was owned more by the group than an individual which I liked.

Student skills required & developed

The exit survey revealed that 10 of 13 students agreed or strongly agreed that the training they received to use the VLE was sufficient.

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One student’s view was that training was not needed at all. In the focus group session the induction described as adequate, “...it’s just clicking on stuff, there are no new skills needed”.

The introductory group process workshop attempted to prepare students to work effectively together in groups. Students reported that the group tools provided scope to apply some of the group work principles such as communicating and agreeing tasks, organising meetings and exchanging work.

Staff skills required & developed

It is a particular challenge to create resources that are equally useful online and in a lecture. We did not want to create multiple versions of lecture material in which anomalies could occur.
Actions for further development

Development of the module is not so much about the VLE per se but does effect the way students see the VLE. We needed to make the links between the lecture material and the project work more obvious. We have addressed this by redefining the remit of the assessment so they have to explicitly make the link between their project work and ethical issues.

It might be possible to develop activities related to the lecture material – such as discussions about an ethical issue – participation in which could form part of the assessment.

A revised and updated set of VLE tools has been used for the module’s second iteration in place of file exchange and the group tools discussion board. Importantly, groups still have their own collaborative space within the VLE, but it now consists of:

- A folder, with adaptive release based on group membership so that students see only their own group space when selecting the ‘Groups’ menu option.
- Within the folder, a group discussion board also adaptive released; a group wiki (enabling collaborative writing and file upload and download) and wiki instructions (see below). The folder also contains a link to the group membership list so students can readily see who else is in their group.

Screen shot showing Emma’s new group set-up

*initiated in the module’s second iteration*