



Education Departments' Superhighways Initiative

Group E: Higher and Professional Education

Final Report

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Notes on the evaluation

1. The evaluation was conducted in three parts:

Part One – Investigation of current courses using semi-structured interviewing and observation

This phase of the evaluation involved observing all live-links sessions over a period of 3 months. The evaluator carried out informal interviews and group reflections with all the tutors and trainees taking part. The views and experience of staff at the College, including the technical and support staff and those designing and administering the courses, were also very relevant to this evaluation. Formal interviews with a range of College technical and administrative staff were also carried out.

2. *Part Two – Exploration of live links for skills training and application in surgery using structured interview by telephone*

This second phase of the evaluation involved preparation of a telephone-interview schedule based on the results of the first phase interviews. Five tutors of the courses, 10 of the consultant surgeons and 10 specialist registrars who had attended them, were interviewed in depth. The interviews focused on the contextual and pedagogical factors associated with learning from live links and, crucially, applications of this learning to surgical practice.

3. *Part Three – Extension of live-links technology and applications*

The integration and extension of live-links technology with other technologies for more effective learning, and its use for other audiences, were explored at all stages of the evaluation. Conclusions and indications are presented and discussed.

Section 3

Project Observations and Recommendations

1. There are two unquestioned conclusions from the investigation so far:
 - the technology is robust, appropriate and well supported
 - the educational value of the application of the technology is confirmed by trainees, tutors and management.
2. The primary learning opportunity provided by the technology is the observation of experts at work: how they perform new techniques, how they handle difficulties and how they carry out various details of surgical operations.
3. The primary value of the particular application designed by the College is the interaction provided with the operating surgeon and the discussions fostered by the moderator, course tutors and trainees.

Live links and the surgical training tradition

4. The effect of the technology on the whole tradition of surgical training is an interesting longer term outcome of the project. The apprenticeship model has always been one of the fundamental elements of surgical training, and this has involved assisting at operations, carrying out the operation with expert assistance, and finally operating without assistance. The group-tutoring model that the College is providing represents creative building on tradition. The collegiality amongst the tutors on the course, the group methods of training and discussion and the interactions around the live links all mark a slight change from the older model. All of those questioned about this shift felt it was a positive gain, adding to the richness and helping to cope with the compression of training time already occurring in the profession.

Cost

5. In terms of the cost of introducing broadband technology, this application is very similar to the vast majority of new technology uses within education. The new medium is seen as a valuable *addition* to the teaching programme, but never accepted as a *substitute* for other methods. Consequently, it is difficult to make significant savings in other areas of the educational provision to compensate for the expense of introducing the new technology. However, there seems to be a general acceptance (at least amongst the tutors interviewed so far) that the use of live transmissions will help to ameliorate the reduced training time already being introduced.

Copyright

6. The question of copyright on the live-link material is another interesting issue, which the College believes has no exact parallel. Copyright is not a pressing issue at the moment, but is something that will have to be investigated further should the College find the resources to use live-link material in CD-ROMs, or as take-home videos.

Implications for further work

7. Some items of further work are indicated if future developments are considered:

- the College should prepare a brief for a market survey to be carried out by appropriate people in the medical training field to ascertain the potential take-up of a range of technology-delivered live-links training programmes.
8. As a low-risk strategy, the College is in the unique position of being able to trial a multipoint system by designing a training course around both the switchband link and the fibre optic link to the Royal London Hospital. From this experiment, they could gather some experience of the value of a multiple link. So the second implication is:
- that the College might instigate a pilot multiple link on a training course and evaluate the pedagogical benefit of additional live-link input.
9. Finally, the College should set out a plan for increasing the take-up of the current system by a) expanding the number of courses offered, b) including open surgery training, and c) designing further 1-day and half-day events. In this way, the College can:
- design a programme of cautious expansion
 - consider how the Web and an associated conferencing system might be introduced onto its current courses in order to:
 1. provide added value to current courses
 2. reduce the amount of face-to-face training
 3. enhance the content of various areas of the curriculum.
- 10 In addition to supporting what they currently do:
- the College should consider using the Web to:
 1. provide courses for a wider range of medical personnel
 2. target courses for specific levels of trainee
 3. support new kinds of courses for new markets.
11. These recommendations will put new demands on the staff of the College; some will need training in the educational use of the Web and interactive conferencing. Preparing on-line text and multimedia materials is also a new skill that takes expertise to carry out properly. Nevertheless, this direction has the potential to serve the surgical community well and to extend the live-links technology into new kinds of applications.
12. However, when such developments are being considered, the central reasons for the success of the live links must be borne in mind. These are that:
- the technology is robust
 - it fits in with and builds on the existing effective ways of learning surgery and the professional culture associated with that
 - it avoids competing pressures on the participants' time by removing them from their site of practice
 - it does not put any organisational or cost burden on any agency other than the College

- it is, essentially, a support rather than a change of direction or free-standing innovation.
13. Any other developments of the use of live links would do well to display these characteristics also.