

Using the Internet for postgraduate medical education

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Obtaining information from the Internet can be fun. As the Internet is unregulated, the quality of this information can vary enormously and time can be wasted searching poor quality websites. Despite this, use of the Internet for postgraduate medical education is increasing.

Postgraduate doctors in training need to continue learning and developing professional skills. To do this, educational objectives are identified and the best methods of teaching and learning employed. Traditional sources of information include books, journals, lectures and tutorials alongside service-based learning (or 'apprenticeship'). Computers and the Internet are new additions to these resources.

In nearly all workplaces computer usage is ubiquitous. While clinicians have been quick to appreciate their benefit with regard to clinical databases and word processing capabilities, the acceptance of computers as an educational resource has been slow. This should change with the emergence of a generation used to working with computers and the Internet. The traditional sources of information may be supplemented or replaced by computer-based learning programmes.

Already anatomy (Bacro et al, 1997) and physiology (Dwyer et al, 1997) have been taught using a web site. Radiology is considered to be particularly suited to learning using 'telemedicine' or telecommunications (Pastore et al, 1996; McEnery, 1995) with respondents willing to pay for this service (Richardson and Norris, 1997).

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The use of the Internet in medicine has been discussed in numerous articles (Arvanitis, 1997; Barnett, 1995; Bergeron, 1998; Chodorow, 1996; Masys, 1998; Mooney and Bligh, 1997; O'Connell and Gordon, 1997; Bouffard, 1996; Smith, 1997). These discussions recognize the potential of the Internet for medical education. However, a cautionary note has been introduced by some (Grinfeld et al, 1996; Friedman, 1996; Jaffe and Lynch, 1996).

The amount of educational software is rapidly increasing (Denier et al, 19997; Williams et al, 1996; Jameson et al, 1995; Hayes and Lechmann, 1996; Bittorf et al, 1995; Savitt and Steele, 1997). If these resources are to be optimally utilized it is important to ensure these programmes are user friendly and accessible (Hough, 1997). In addition, the users must be reasonably computer literate and able to access the information.

For those entrusted with the training and continuing education of postgraduates, it is necessary that all methods of learning are available to trainees. The West Midlands region has a population of 5.5 million and trains approximately 10% of all the specialists for England. The Postgraduate Deanery made a decision to install Internet access for all specialist trainees within the region, and to assess their ability to use this educational resource. This would inform future policy.

METHODS

A questionnaire was developed and was sent to all 1024 specialist registrar grade (SpR) trainees within the West Midlands. This asked for brief personal

details, access to computers and usage, access and use of the Internet, and what trainees would want from an educational Internet site. A further question asked if they would contribute to such a site.

RESULTS

From 1024 trainees, 489 responses were received, a response rate of 48%. Of respondents 314 (64%) were male, and 162 (33%) were female, with 14 failing to answer. This reflects the region's proportion of 68% male trainees and 31% female trainees. Specialist training programmes are from 3 to 6 years in length, so the respondent's median length of training as being in year 3 of training was as expected.

Although all respondents could use computers, 15 (3%) reported no computer access. For the Internet 371 (76%) had access; 226 (46%) at work and 147 (30%) at home, and 118 (24%) considered that they had no access, even though all the postgraduate libraries in the region were installing Internet access at the time of the survey.

Of 371 respondents using the Internet, 316 (85%) used the Internet for educational purposes, with 130 (35%) working from home and not accessing the Internet for education at work.

Of the 118 respondents who did not report access to the Internet, 103 (87%) expressed a wish to use this for educational purposes.

Table 1 lists the options for a web site chosen by respondents from those provided in the questionnaire. Reviews and links to other quality sites were considered the most important, along with information about conferences.

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TABLE 1
Web site: preferred options

Option	Number (per cent)
Journal reviews	416 (85%)
Links to quality sites within speciality	413 (84%)
Topic reviews	386 (79%)
Conference information	322 (66%)
Quiz or problem solving programmes	263 (54%)
Radiology slide collections with commentary	243 (50%)
Simulation of crises and how to manage them	233 (48%)
Histology/pathology slide collections (with commentary)	191 (39%)

Opportunities for interactive learning such as quiz or problem solving programmes and simulation of courses were considered less important, as were slide collections with a commentary. Only 60 respondents (12%) would contribute to a web site.

DISCUSSION

The response rate was low at 48%, but this reflects that this was a single mailing. No follow-up was attempted, as there is considerable turnover of SpRs. Other questionnaire surveys of junior doctors in the UK report similar response rates. These range from 38% in a study on learning styles in general practice trainees (Bligh and Slade, 1996) to 59% (Rotem et al, 1995) for junior hospital doctors.

Even with this low response rate, computer and Internet use is widespread among the SpR training grade within the West Midlands. The overall rate of 64% using the Internet for educational purposes in this survey was much higher than the 24% of paediatric respondents in a residency programme (Pusic, 1998). Training in how to use the Internet effectively will be needed for the significant proportion (24%) who are not using the Internet at present. Trainees in this group recognized this as 87% wished to learn. As more homes are connected to the Internet, use of this for education at home can be expected to increase.

The worldwide web provides access to an enormous volume of documents of which a large quantity is extremely poor in quality. Much time can be wasted 'surfing the net' for high quality information. The ideal scenario is a

single site providing links to high quality sites as well as providing a number of other services such as review documents, information and quiz or problem-solving programmes. These must be produced in such a way that learning should be enjoyable.

CONCLUSION

Doctors in specialist training grades are using the Internet extensively for education now. Training in how to use the Internet is needed for approximately one quarter of these doctors. Educational use of the Internet can be expected to increase, and trainees need to know where access sites are available at their place of work. A good web site should provide good quality reviews and guidance to quality educational sites. **HM**

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KEY POINTS

- Doctors in specialist training grades are using the Internet for education.
- Training in how to use the internet is needed.
- A good web site should provide good quality reviews and guidance to quality educational sites.