Current use of and attitudes to e-learning in otolaryngology: questionnaire survey of UK otolaryngology trainees

L FRASER1, S GUNASEKARAN1, D MISTRY2, V M M WARD1

Departments of Otolaryngology, 1Pinderfields Hospital, Wakefield, and 2Leeds General Infirmary, UK

Abstract

Introduction: The e-lefENT programme is a collaborative e-learning project developed by the Department of Health and ENTUK. Prior to its introduction, we aimed to assess current use of and attitudes towards e-learning amongst UK otolaryngology trainees.

Method: A web-based questionnaire was distributed to UK otolaryngology trainees via regional programme directors.

Results: A total of 117 responses was received (35 per cent response rate). Most trainees reported increasing exposure to e-learning throughout their training and rated their current computer literacy skills highly, although satisfaction with current e-learning resources was found to vary widely for a variety of reasons.

Conclusion: Meeting the educational needs of otolaryngology trainees in the current era continues to be a challenge. Most trainees are already familiar with e-learning, although the quality and delivery of available websites is currently variable. The majority of trainees who responded seemed receptive to the implementation of a free, otolaryngology-specific e-learning resource.

Key words: Otolaryngology; Learning; Computers

Introduction

E-learning is defined as learning supported or enhanced by the application of information and communications technology, and is a unifying term used to describe Internet-enabled learning. E-learning has rapidly been adopted as a means of providing training in many industrial and commercial institutions, as well as in most universities and schools globally. Existing research and evaluation of teaching methodologies have shown that e-learning can increase knowledge retention when used as part of a combined learning strategy whereby learning takes place through a number of different types of learning experience.1

E-learning for Healthcare is a collaborative partnership between the Department of Health, the National Health Service and various professional bodies, which aims to provide high quality e-learning content for healthcare workforce training. The British Association of Otorhinolaryngologists Head & Neck Surgeons has been successful in its bid to collaborate with the E-learning for Healthcare programme to deliver a comprehensive web-based otolaryngology training resource.

This resource, named e-lefENT, is scheduled to become available in 2011. The programme comprises online training sessions which aim to enhance traditional learning, support existing teaching methods and provide a reference point for trainees. Content is presented in various formats, such as ‘real-life’ scenarios, case studies and ‘knowledge bites’, and utilises images, audio and video recordings, and animation to help trainees learn and to retain knowledge. The e-lefENT programme also allows users to undertake self-assessment, in order to enhance their learning experience and to allow regular self-review of progress, enabling deficiencies to be addressed. In addition, the ability to audit, track and review trainee participation will provide support for trainees’ e-portfolios and augment their Annual Review of Competence Progression portfolios. Although designed primarily for UK trainees, this e-learning programme will of course be accessible internationally via the Internet.

It is hard to ignore the ever-evolving world of technology and the possible advantages it offers otolaryngologists. However, caution needs to be exercised in inferring that e-learning can compete with existing training methods by virtue of its technological
advantages and wide availability, or in assuming that it will even appeal to current trainee otolaryngologists.

The current study was conducted prior to introduction of the e-lefENT programme, and aimed to assess use of and attitudes towards e-learning amongst UK otolaryngology trainees.

**Methods**

We designed a 20-item questionnaire, using Survey Monkey software (www.surveymonkey.com), which was distributed to UK otolaryngology trainees electronically via regional otolaryngology training programme directors, between April and May 2009 (Appendix 1). Two email reminders were sent.

All replies were anonymous and were returned electronically to a central database for analysis.

**Results**

We received a total of 133 returned questionnaires, of which 117 had been completed adequately. The 16 incomplete questionnaires were excluded from analysis. In the UK, there are currently 338 trainees in otolaryngology; our questionnaire response rate was thus 35 per cent. Seventy-four per cent \( (n = 86) \) of respondents were male and 26 per cent \( (31) \) female, with half of all respondents aged between 31 and 35 years.

Most respondents had graduated from medical school around the late 1990s or early 2000s. Only 22 per cent \( (26) \) had been exposed to e-learning during their medical school training. However, almost double this number \( (42 \text{ per cent}; 49) \) had become familiar with e-learning as part of their basic surgical training or foundation year programme.

Respondents’ general computer skills were self-rated as excellent by 26 per cent \( (30) \), good by 46 per cent \( (55) \), satisfactory by 26 per cent \( (30) \) and poor by 2 per cent \( (2) \).

The majority of respondents \( (81 \text{ per cent}; 95) \) stated that they already used e-learning to support their learning, mainly on a daily or weekly basis and most commonly for 0–2 hours per session. The majority of these respondents used e-learning both at home and work \( (57 \text{ per cent}; 54) \) and on a mainly opportunistic basis \( (63 \text{ per cent}; 60) \). For those not currently using e-learning as a learning resource, reasons included ‘technophobia’, headaches whilst reading for prolonged periods from a computer screen, a preference for reading books, and a lack of awareness of any currently available or useful otolaryngology-specific e-learning resources.

Respondents used e-learning most commonly for accessing new research, guidelines and protocols, and also to obtain information on general patient management and surgical techniques (Figure 1).

The most common websites used by trainees included eMedicine (www.emedicine.medscape.com), PubMed (www.ncbi.nlm.nih.gov/pubmed/), Google (www.google.com), Doctors.Net (www.doctors.net.uk) and Wikipedia (www.wikipedia.org/). The formats of learning material accessed during e-learning are detailed in Figure 2. Websites were sourced most commonly via random Internet searches or via recommendations from colleagues.

The user-friendliness of current e-learning resources was rated as excellent by 2 per cent of respondents (2),
good by 31 per cent (29), satisfactory by 42 per cent (40) and poor by 20 per cent (19).

Only six respondents currently paid for e-learning. Satisfaction with current e-learning resources varied widely, but most respondents considered them satisfactory or more than satisfactory as a resource for specialty training (Figure 3).

When asked whether a specialty-specific, evidence-based e-learning resource would be used if it were available and free, 86 per cent (101) of respondents agreed.

Discussion
Meeting the educational needs of trainee otolaryngologists in the current era continues to be challenged by such factors as the European Working Time Directive, Modernising Medical Careers programme and run-through training. These changes have resulted in a reduction in working hours, with consequently more shift-working and time-limited training. The need to deliver consistency of training, and teaching that adheres to the Intercollegiate Surgical Specialty Curriculum Programme (and delivers it to suit the needs of the individual trainee), poses a further challenge.

Significant progress has been made in terms of standard-setting, curriculum development and quality assurance of the various regional teaching programmes and examinations. However, the scale of the work required to maintain standards and to manage the key agents of change (such as the European Working Time Directive and Modernising Medical Careers) will soon necessitate a robust solution to ensure consistency, participation and self-directed learning that is fit for purpose.

Existing research on the use of e-learning resources within other surgical specialties suggests that such resources enable significant improvement in knowledge retention and learning satisfaction, when used as an adjunct to traditional methods. Use of e-learning within otolaryngology could provide a strategy to deliver an excellent training resource, incorporating a wealth of ENT expertise from around the UK, with an emphasis on self-directed learning with built-in self-assessment.

Our questionnaire results show that most otolaryngology trainees have become increasingly familiar with the concept of e-learning as their medical training has progressed, and that many are already routinely using the Internet to support their learning. Most respondents to our questionnaire graduated from university in the late 1990s or early 2000s and are therefore, by default, of a generation that is familiar with computers and the Internet. This was reflected in our respondents’ overall high self-rating of computer literacy skills. More generally, such computer literacy seems to imply a greater likelihood that otolaryngology trainees will embrace the new e-LEfENT programme as an adjunct to traditional learning resources. Of those respondents not currently engaged with e-learning, most admitted that there were simply no otolaryngology-specific online learning resources available to make it worthwhile to do so.

Most otolaryngology trainees who currently used e-learning did so on an ad hoc basis, both at work and home. This may reflect the paucity of good otolaryngology-specific resources online; alternatively, and perhaps more likely, it may reflect the often opportunistic nature of Internet-enabled learning undertaken during the working week (e.g. at lunchtime or in between operating theatre cases). Most ENT departments, operating theatres and clinics now provide trainees with access to computers with Internet facilities. Such access, combined with the ability to download and save e-learning modules, will help trainees to engage with e-learning whilst at work.

Our respondents’ motivations for e-learning varied, but most commonly included searching for new research, accessing the best evidence, guidelines and protocols, obtaining help with patient management, and learning surgical techniques. Most information was gained after random Internet searches or following recommendation of a website by a colleague. However, trainees were clearly concerned that the information they searched for should be structured, up-to-date, evidence-based and clinically relevant.

We hope our respondents would therefore be encouraged to know that an editorial executive board and team of section editors have now been appointed to commission the delivery of e-LEfENT content material and to monitor quality. Content authorship is invited and...
Meeting the educational needs of trainee otolaryngologists is a continuing challenge

E-learning is learning supported or enhanced through information and communications technology

In this study, 81 per cent of ENT trainees reported using e-learning on an opportunistic basis, most commonly to access new research, guidelines and protocols and to obtain information on patient management and surgical techniques

Respondents found the quality and delivery of available websites to be variable; most would welcome an otolaryngology-specific e-learning resource

Despite these concerns, our findings provide insight into the current use of and attitudes towards e-learning amongst UK otolaryngology trainees. This information can hopefully be used to shape the e-lefENT programme, in order to best meet trainees’ needs. Although our respondents’ satisfaction with current e-learning resources varied widely, most seemed receptive to the idea of a free, otolaryngology-specific e-learning resource.

**Conclusion**

Most otolaryngology trainees are already familiar with the concept of e-learning. However, the current quality and delivery of available training websites varies.

The e-lefENT programme will hopefully address this gap. This free, self-directed e-learning initiative aims to support and enhance ENT training by improving knowledge and clinical and surgical skills, ultimately ensuring the delivery of safe patient care.

Most otolaryngology trainees are receptive to the implementation of a specialty-specific e-learning resource. Continued evaluation is vital to ensure the success of the e-lefENT project.

**References**


**Appendix 1. Questionnaire**

1. In which Deanery do you currently train?
2. Are you male or female?
3. How old are you?
4. In which year did you qualify?
5. What is your current level of training?
6. How would you rate your computer skills? (Very poor, poor, satisfactory, good or excellent)
7. Was the teaching of your medical school curriculum supported by e-learning? (Yes or no)
8. Did you access e-learning during your previous training (e.g. foundation years or basic surgical training)? (Yes or no)
9. Do you currently use e-learning as a resource for your training? (Yes or no; if no, please say why and then go to question 20)
10. What do you use e-learning for? (Please tick all that apply: accessing research, searching for best evidence, accessing guidelines and protocols, help with patient management, understanding basic

Appendix 1. Questionnaire

1. In which Deanery do you currently train?
2. Are you male or female?
3. How old are you?
4. In which year did you qualify?
5. What is your current level of training?
6. How would you rate your computer skills? (Very poor, poor, satisfactory, good or excellent)
7. Was the teaching of your medical school curriculum supported by e-learning? (Yes or no)
8. Did you access e-learning during your previous training (e.g. foundation years or basic surgical training)? (Yes or no)
9. Do you currently use e-learning as a resource for your training? (Yes or no; if no, please say why and then go to question 20)
10. What do you use e-learning for? (Please tick all that apply: accessing research, searching for best evidence, accessing guidelines and protocols, help with patient management, understanding basic

Appendix 1. Questionnaire

1. In which Deanery do you currently train?
2. Are you male or female?
3. How old are you?
4. In which year did you qualify?
5. What is your current level of training?
6. How would you rate your computer skills? (Very poor, poor, satisfactory, good or excellent)
7. Was the teaching of your medical school curriculum supported by e-learning? (Yes or no)
8. Did you access e-learning during your previous training (e.g. foundation years or basic surgical training)? (Yes or no)
9. Do you currently use e-learning as a resource for your training? (Yes or no; if no, please say why and then go to question 20)
10. What do you use e-learning for? (Please tick all that apply: accessing research, searching for best evidence, accessing guidelines and protocols, help with patient management, understanding basic
science, drug dosage information, learning surgical
techniques, information on new treatments, self
assessment, learning communication skills)
11 How frequently do you use e-learning, and for how
long? (Daily, weekly, monthly or yearly, and for
0–2, 2–4, 4–6 or 6–8 hours)
12 Do you use e-learning on an ad hoc basis or as a
planned activity?
13 Which websites do you regularly use for your e-
learning? Please list.
14 What are the on-line learning methods available on
these websites? (Please tick all that apply: Journal
articles, Textbooks, Tutorials, Videos, Tests,
Chatrooms, Audio materials, Private email,
Video-conferencing, Simulators)
15 How did you source the websites used? (Please tick
all that apply: Self-search, Colleagues, Local NHS
library, Educational supervisor, ENT UK, RCS,
ISCP, Deanery)
16 Where do you usually access e-learning? (Home,
work or both)
17 Do you pay to access e-learning? (Yes or no)
18 How user-friendly do you find the websites that you
use? (Very poor, poor, satisfactory, good or
excellent)
19 Overall, how do you rate e-learning as a resource
for your specialty training? (Very poor, poor, satis-
factory, good or excellent)
20 Would you use a specialty-specific, evidence-based
e-learning resource if it were free and available in
future? (Yes or no)

Address for correspondence:
Miss Lyndsay Fraser,
Department of Otolaryngology,
Pinderfields Hospital,
Aberford Road,
Wakefield WF1 4DG, UK
Fax: (0)1924 201680
E-mail: LyndsayFraser@doctors.org.uk

Miss L Fraser takes responsibility for the integrity of the
content of the paper
Competing interests: Miss Victoria M M Ward, Consultant
Otolaryngologist, is Clinical Lead for the e-teLENT project