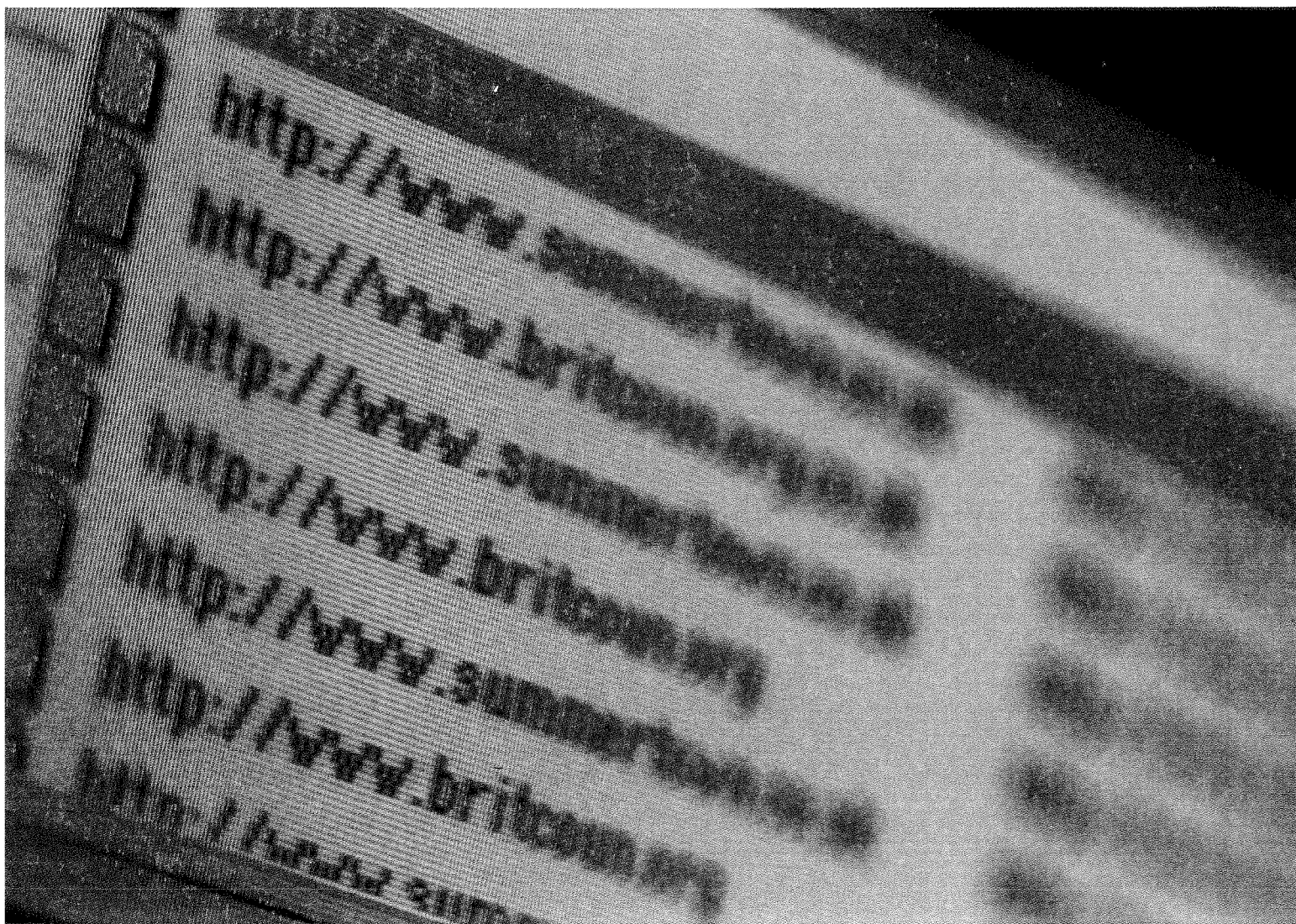


# The Internet and ELT

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The Impact of the Internet on English Language Teaching



**David Eastment**

••••• The  
••••• British  
••••• Council

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SUMMERTOWN  
publishing



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David Eastment

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# Preface

There is no doubt that the Internet is one of the most exciting of new technologies and one which will eventually transform the way that the teaching and learning of English, and the business of ELT is conducted. But there is a great deal of hype about the new technologies, and often a corresponding disappointment when experience demonstrates their limitations. There is also not a little anxiety about the whole business amongst those who fear being overtaken by developments not only in communications technology, but also in the kinds of skills required by teachers, managers, and learners.

A short, clear guide to the practical state of the art is long overdue. Teachers, directors of studies and managers alike will appreciate David Eastment's well-informed and sober assessment of what is now available and how it can be used to best advantage in practical teaching contexts.

This book is based on a report commissioned by The British Council in 1996, and a revision of that report carried out in 1998. It is clear that much has changed in the two years between these reports and perhaps even clearer that the world of the Internet will continue to change rapidly in the next few

years. In this newly updated publication, David Eastment identifies some of the key trends and suggests opportunities for British ELT.

The original report focused particularly on the impact of the Internet on British providers of English language services.

Summertown Publishing have collaborated with The British Council to make this report available in book format, and have taken the opportunity of adding new material to extend the book's usefulness to ELT professionals in other parts of the world. The book joins our growing list of titles designed to help ELT professionals stay abreast of new developments in the teaching and learning of the English language.

We hope to provide updated editions of this book, to take into account the rapid developments in Internet based teaching expected in the next year or so, and to expand those sections of most practical use to ELT professionals. If there are features which you think would enhance the usefulness of this guide, or know of new developments which you think should be included in the next edition, please let us know by sending an email to:

[updates@summertown.co.uk](mailto:updates@summertown.co.uk)

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February 1999

The Internet can be viewed in a variety of ways. At its simplest, it is the interconnection of hundreds of thousands of local networks, 'the mother of all networks', the mechanism which allows one computer to exchange information with another, whatever the type of computer or its physical location.

Yet there are many other ways of understanding the Internet. It can be seen as one of the 'mass media' similar to newspapers, radio and TV, but with the crucial difference that it has been, from the start, a digital medium, whereas other media are only slowly moving from analogue to digital. It can be thought of too as a vast repository of information, a global CD-ROM of unlimited capacity. Or it can be viewed as a communications network, similar to the international telephone network, which people use to exchange data or simply speak to each other.

However the Internet is viewed, it is an extraordinary phenomenon. Despite the best efforts of governments around the world, it resists legislation and planned development. It is largely uncontrolled, and may be uncontrollable. It coexists uneasily with telephone, television and radio, and is

transforming how all of them operate. It is beset by problems, many of which are dealt with elsewhere in this book, but at the same time offers unparalleled usefulness and convenience – as anyone who has researched information on the Web or subscribed to an email service can testify.

The social impact of the Internet is inescapable, at least in the developed world. It is difficult to open a newspaper or watch an evening's television without some mention of it being made; advertisements carry Web addresses almost as a matter of course. It would be surprising if a revolution of this nature were not to have some impact on the business of English Language Teaching.

**The Internet is already having an impact on the ELT business, although in unpredictable ways**

### What this book does

This book aims to map out the territory for ELT professionals to help identify present trends and consider the likely impact of future developments.

It should be said first that the least important element is the one which occupies the most attention: the ELT Web sites – of which there are now hundreds – offering quizzes, exercises, and materials to an audience which tends to be little better defined than 'people who want to learn English'. Most of the learning material currently

available on the Internet could well be defined as 'better ways of burning witches.' The owners of these sites focus on the delivery aspect of the Internet, but what is delivered is little different from the Computer-Assisted Language Learning (CALL) materials of the early 1980s. The latest technology makes it relatively easy to develop multiple-choice or gap-filling exercises and make them instantly available to a potential audience larger than the population of Germany. But they remain multiple-choice and gap-filling exercises, and the way that they operate on a networked computer is no different from the way they used to operate on an Apple II in 1982.

The other, much less 'hyped' aspects of the Internet are considerably more important. The fact that learners and teachers in one part of the world have access to authentic and up-to-date material, in easily manipulable form, from an English-speaking country; or that students can create a newspaper on the Web with a potential audience of millions, rather than hundreds; or the fact that the easy to-and-fro of messaging can create relationships between student and student, or service-provider and customer – all these are significantly more potent.

The power of the Internet resides in being able to communicate with users outside one's immediate physical environment; being able to receive not just words, but sounds and pictures; and

### How the use of the Internet for ELT has changed since 1996...

#### It has grown and spread

The use of the Internet in all aspects of ELT has grown rapidly between 1996 and 1998, and continues to accelerate. The number of ELT sites on the Web has tripled, and most UK schools now have a Web presence, as does virtually every ELT organisation and association.

Internet connections are now commonplace in schools in the developed world, with at least one workstation connected.

More prosperous private schools and virtually all universities have significant numbers of networked, Internet-connected machines and are beginning to use them

imaginatively and creatively for language learning.

#### It's easier to use

Teachers have become more used to the technology, and have embraced it far more readily than was the case with 'conventional CALL', or even CD-ROM based multimedia.

#### Exciting technology is available!

The use of video and videoconferencing through the Internet remains rare, although streaming audio is increasingly being used as a classroom resource, as innovative teachers and learners seek new and exciting ways of using the technology for learning.

#### New materials are under development

Web sites offering specifically ELT materials have improved. And – while most remain the preserve of enthusiastic individuals, and most of the value of the Web for teaching and learning still lies in authentic materials – a few interesting and significant ELT sites are now beginning to emerge.

#### It's bigger business than ever

Ecommerce is now a reality on the Internet, which makes it more likely to make ELT activity commercially viable.

being able to produce content, rather than simply passively receive it.

This book, in six sections, describes the facilities which are now offered by the Internet and the ways in which they are, or can be, exploited by the ELT profession.

*Section one* describes the phenomenon of the Internet in general terms, with particular reference to its two main activities: email and the World Wide Web.

*Section two* focuses on how teachers and students are using Internet today in English Language Teaching. It does not attempt to provide a comprehensive listing: there is simply too much material available to cover. Instead, it aims to provide a snapshot of the most important areas of development.

*Section three* identifies some of the basic skills that teachers and students will need in order to exploit the Internet to best advantage. It focuses particularly on perhaps the most basic skill of all: how to search the Web and find what you want.

*Section four* examines how electronic commerce (ecommerce) is now conducted over the Internet, and identifies some of the opportunities for the ELT business.

*Section five* sets out the major issues raised by the Internet for ELT: such as quality of material and reliability of equipment.

*Section six* attempts to tease out some of the trends which have implica-

tions for English teaching and learning, training, and planning.

The first report into the impact of the Internet on ELT – out of which this book grew – was commissioned by the British Council in 1996, and concluded:

The impact of the Internet on British ELT has so far been marginal.

Outside the publishers and the universities, few organisations or individuals are 'wired'. Where there is access, it is often limited to a single connection, typically to administration, or to the marketing department. The prevailing attitude seems to be one of 'cautious interest'.

This is no longer entirely the case. Internet access is becoming the rule, rather than the exception. There is growing awareness of the changes the Internet might bring, both in business and in the classroom. Awareness amongst teachers, however, is often not matched at managerial level. There are a few bright spots in British ELT on the Internet, but management on the whole remains reluctant to invest significant funds in what is seen as a 'difficult' or 'risky' technology. Investment decisions tend to be made reactively, and in response to perceived demand from customers. The prevailing attitude remains one of 'cautious interest'. And in the meantime, the world is changing around us.

## and how it hasn't...

### It's all happening too quickly!

One of the biggest problems is the pace of development and the proliferation of new technology.

Schools and institutions will need to devise mechanisms to stay aware and up-to-date with developments, and still be able to make informed decisions about which paths to follow. The speed of change makes real effective planning a complex process.

### Teachers need training!

The requirement for training and awareness-raising remains, and is if anything more urgent than in 1996. Teachers

need both practical support and opportunities to discuss the impact of technology on their methodology and pedagogy.

### Sometimes it's slow...

...and sometimes it's unreliable. The Internet can be unpredictable; a technical mind is still needed to tackle some of those error messages and the jargon (on-screen and off) can be unhelpful.

### And it could be illegal

Security, copyright and the policing of copyright infractions remains an obstacle to the availability of good content. Progress is being made slowly in all of these areas, and none are insoluble in the foreseeable future.

### Will people commit the funding?

As far as British ELT is concerned, there is still a resistance at managerial levels to committing significant funds to Web site development and training.

Investment in the Internet tends to come as a result of pressure to change from teachers, or through competition from other schools, from outside organisations, or from the students themselves, rather than as a strategic decision planned for the longer term.

The Internet offers many new remarkable facilities and new ways of communication. Yet the speed with which new products, facilities, hardware updates and software developments are delivered and adapted for use by companies and by individuals means that it's difficult even for the most committed enthusiast to keep abreast of the market and an eye on the opportunities now emerging.

## What's available?

This section explores the territory, setting out the framework against which we can examine the impact of the Internet on ELT and the ways ELT can use the Internet productively, and profitably.

The Internet is dominated by two main activities: first the exchange of electronic mail (email) and second, viewing – and sometimes interacting with – material on the World Wide Web (WWW). Both kinds of Internet use are described here, together with a variety of related activities relevant to ELT.

## Words, and more words

One of the defining features of the Internet is the huge volume of words which flow daily through cyberspace. Indeed, despite the publicity given to

the World Wide Web and its possibilities for multimedia communication, the Internet's most important role still lies in relatively simple, text-based communication between people who are far apart. Here we provide an overview of the main text-based facilities which the Internet offers: email, discussion lists and newsgroups.

**Email** Electronic mail is one of the key facilities of the Internet and its use for private and business communication is growing rapidly. In countries with developed mail services, it is a useful additional feature:

Once a critical point is reached, connection to the Internet becomes a question of 'when' rather than 'if'

messages can be sent with little delay (a typical email message takes only minutes to arrive), and in a form which is readily usable by the recipient. In countries where conventional postal services are erratic or non-existent, such as parts of the former Soviet Union, email allows users to bypass the 'snailmail' generation completely.

Email has been used for several decades by university academics, but has only had a real impact on the rest of the world in the last few years. Like the Web itself, it is subject to Metcalfe's Law: the usefulness of a communications technology can be measured as the square of those machines connec-

### Internet

An internet is a connection between two or more computer networks. When capitalised the word refers to the global 'network of computer networks' which allows computers to share information, text and graphics, and to be accessed from any part of the world

### Web site

A place to go on the Internet for information, viewable on your computer screen. The place is in cyberspace, and the information can be anything from out-of-date or misleading trivia to up-to-the-minute news and authoritative data. Web sites may contain both text and graphics and are usually organised and designed as 'pages', or screens of information.

### login

Getting into a computer system. A *login name*, *username* or *account name* is the name used to gain access. You usually also need to type in a personal password.

### address

A unique name or number which identifies either a computer on the Internet or a computer user's email mailbox.

### email

Typing messages at the computer keyboard and sending them off into cyberspace to someone who can receive them. There are many email programs available which allow you to send and receive messages – the format in which mail is transmitted is standard whatever software or computer you use.

## Who understands the Jargon?

The computer world is riddled with acronyms, short-forms and jargon. Engineers and programmers, suppliers of computer kit and techno-heads scatter such terms around liberally.

For the person who just wants to make a computer work, listening to techno-language can be alienating. However, there is plenty of help on the Web: some university sites give guides to the Internet and dictionaries of usage are available. This book aims to help too. ELT teachers now negotiating the Web might also take comfort in the idea that their own explanations to a student will probably be clearer than anyone else's.

## Jacking in to Cyberspace

Cybercafe, cybercash, cybersex; if it exists in the 'real world' it exists in cyberspace. The term cyberspace is widely credited as originating from William Gibson's 1994 novel 'Neuromancer' to describe the resources of computer networks where people 'jack in' to access resources.

Cyber as a prefix is now widely used as a description for a range of activities. A cybersnail is a person who cruises through online services and networks; a cyberlibrarian is someone who uses the Internet for research; a cyberpunk is an anarchic presence living from their wits, and cybersex is the online version of a telephone sex line.

## Email: not just for geeks

'It was then I checked my digital doormat and saw the vast heap of e-mail awaiting me. There was mail from friends and from family that communicated more than a telephone conversation ever could have done. There were letters by the hundreds from complete strangers...

'Put the average geek on the telephone and he or she will not be up to much. Put them behind a keyboard, however, and the act of literary composition forces a wit, an integrity, an insight, an emotional and moral honesty that would amaze even an optimist.' (Stephen Fry – cited in Goodman and Graddol, 1996)

# What's the Internet?

ted to it. Rather like the fax machine, there is little point in the technology when only a few users are connected, but once a critical point is reached, connection becomes a question of 'when' rather than 'if'.

**Discussion lists** Discussion lists are simply computer programs, often running in university environments, which allow individuals with a common interest to share information via email. A subscriber sends an email message to the list's central address, and the program then transmits it to all members. Any response is posted to the list itself, rather than to the individual, and is in turn forwarded to all participants. The most widely used programs used to run such lists are *Listserv*, *Majordomo* and *Listproc*. Originally confined to mainframes and high-powered UNIX-based systems, lists can now be run from personal computers.

There is little programming wizardry involved in creating discussion lists. A small list can be run successfully with ordinary email software, but once the discussion group grows beyond a certain size, say 20 to 30 individuals, special list software is invaluable in automatically handling new subscribers, sending out instructions, suspending the service to users while they are on holiday, and so on. Such activities would tie up a human organiser on a full-time basis.

## Why use lists?

If you're thinking of creating an electronic magazine for students, distributing updates to books or materials; if you're keen to ensure that large groups of people receive your brochure, news, timetables for visits and outings, minutes or agendas for meetings; if you need to contact employees with announcements or memos; if you are a member of a teacher group or research community; you may need a mailing list.

Mailing lists allow groups of people to communicate with each other using one of the most basic but powerful Internet technologies: email.

**Newsgroups** From the earliest days of computer use, individuals with similar interests have grouped themselves together and used Bulletin Board Systems (BBS) to pass on information. Many of these BBS have become part of a global information service known as Usenet.

Usenet now hosts over 20,000 different group discussions on a wide range of subjects: from groups which discuss specific brands of chocolate, to those which focus on Icelandic horses. For many, such newsgroups represent the soul of the Internet: like-minded individuals willing to share opinions or offer advice readily and at no charge.

Newsgroups are similar to discussion lists inasmuch as they bring together individuals with a common interest. There are important differences between the two, however. Whereas lists require you to subscribe before you can read or contribute to the discussions, and the list of names used for distribution is held in a central location, usually under the control of a single person (the 'listowner'), anyone can read the discussion in a newsgroup: the user has only to make the decision to download those items which interest them from a local access point.

Unfortunately, newsgroups have had a bad press over the last year. There is a proliferation of groups relating to pornography; the increasing number of newcomers to the Internet ('newbies') has led to a large number of inappro-



Listserv (a registered trademark of L-Soft International) was produced in 1986 for managing academic lists on IBM mainframes; the software is now widely available and is used for the creation and management of public and private mailing lists. A catalogue of over 22,000 public lists is available on the Internet at:  
<http://www.lsoft.com/lists/listref.html>

The world's largest list has nearly 450,000 subscribers.

## Is it OK to be there?

It was once the case that people who used the Internet, who could 'surf' and pass strange new words knowingly between themselves, were considered a fringe group ... regarded by ordinary people with a certain degree of suspicion.

That view has certainly changed in the last two years, as the 'net' now plays a significant role in social, as well as workplace, patterns of communication. Cyberspace is used for sales or business, Web access for information, or email just to stay in touch with family and friends.

Many factors have helped popularise the Internet in developed countries. There are lower costs of connection and 'free' access; more people are explaining to others how to get started; as more people use the Internet, so it becomes more useful; the technology is easier to handle; there is an explosion of cybercafes in some countries; more employers require staff to use the Internet; ads feature corporate Web sites and Internet Service Providers regularly run 'join us' campaigns. These have helped the Internet become a part of everyday life. The younger generation, especially, considers access – with email at the very least – quite normal:

Every year 200,000 British backpackers travel around the world with their Lonely Planet guide-books (...) The Lonely Planet series, with its 250 titles, sells more than 3 million books each year. A million people visit the Lonely Planet Internet site every day. Lonely Planetters end up joining a transient global social club whose members are linked by Hotmail. (Internet cafes are at the centre of backpacker society and an e-mail session helps pad out the day.) (Stalbow, *Independent on Sunday*, 7 February 1999, p.14-15)

...Looks like if you're not there, it's definitely not OK.

priate or irrelevant postings; and 'spamming', or posting advertisements and announcements to all newsgroups irrespective of topic, has become a real problem.

### The World Wide Web

In the 1970s and 80s, the Internet grew into a significant repository of information. Access to the information was difficult, however, and often required a knowledge of specialised software and of the UNIX operating system. Thus while the Internet has existed in some shape or form for over 25 years, it came to the awareness of the general public only in the mid-1990s. This awareness is due almost entirely to the development of the World Wide Web.

The Web, and the interlinking of documents which created it, was originally part of a research project to organise Internet information.

Then, in 1993, a piece of software was developed which allowed a person to point a mouse at a link and click to call up the required information, without needing to know any details of the type of file, or its exact location. This software, called *Mosaic*, was thus simply a device for 'browsing' through available resources. Not surprisingly, *Mosaic* quickly became popular,

partly because of its ease of use, and partly because it was distributed without charge over the Internet.

Since 1993 other, more powerful browsers have been developed. For several years, Netscape Navigator was the most popular. Since Microsoft began to promote its competing product, Internet Explorer, and to include it at no extra charge with new PCs, it has won an increasing share of the market.

The underlying technology of the Internet – the mechanisms or 'protocols', for communication, file transfer and so on – remain the same, and continue to be used.

In essence, the World Wide Web offers a way of using Internet resources which is intuitive and simple to use, and is not confined to text, but is able to integrate graphics, sound and video.

*Publishing on the Web* The ease with it is now possible to navigate Web pages is not the only reason for the explosive growth of the Web. A second factor is the ease with which one can now create and publish one's own pages. HTML (HyperText Markup Language), the language in which every Web page is written, is simple and straightforward; indeed, it is not

**The Web is being transformed from a repository for text and photographs into an enormous, interactive CD-ROM**

newbie

A newcomer to the Internet. The existence of such a term suggests that people who interact in cyberspace have developed a social network as well as a technological one.

netizen

A citizen of the Internet. The term is used to help promote ideas of responsibility and community.

netiquette

Codes of courteous behaviour encouraged in Internet communication. Breaches of netiquette usually draw complaints or 'flames' from other Internet users.

emoticon

A symbol or group of symbols used by people to convey 'emotion' in a text-only document, for example :) or :-) to indicate a smile, and hence irony or a lack of seriousness.

spam

Sending an unsolicited message repeatedly to a lot of people, for commercial or nuisance purposes. Spamming is considered a breach of netiquette.

### Where the Web came from

In 1989, Tim Berners-Lee, a British computer scientist working in Switzerland, developed a mechanism for data storage and retrieval by embedding 'links' into documents. These links would allow access to other documents, graphics, or computer files. Although 'hypertext' had been developed before, the new mechanism could link together resources whether the computers were in the same room or around the world. The links were essentially tags which indicated the specific location of the file required. The tag is called the URL, or 'Unique Resource Locator'.

### HTML

HTML (Hypertext Markup Language) does not require particularly specialist knowledge to use, despite the grim-looking acronym.

HTML looks like typesetting codes which surround blocks of text with information on how they should look. With such information, data can be read by a Web browser such as Netscape or Internet Explorer, and displayed as you want it. Headings, forms to fill in or buttons to click will each look like they should.

The relative ease of use of HTML has in part helped fuel the enormous explosion of Web pages.

### Web site disappeared?

Many pages in this book carry World Wide Web references. When you try to connect to them, in most cases you will be successful. But you will probably have problems with some sites. The site may have changed its content; you may find your way to an unwanted site; the site may no longer exist or you may receive an error message which seems to give no good reason for lack of access. This is one of the issues raised in this book. The Web changes daily: Web sites may be unreliable sources for practical teaching purposes. ELT professionals clearly need a range of strategies to use such resources effectively for classroom teaching.



# Watching the WWW

really a computer language at all, but merely a set of instructions for formatting and linking text and graphics.

Publishing on the Web has thus become a major growth industry. Anyone can write a home page – and they do, creating resources for other Web users to browse, which can be elegant, or interesting, or, more commonly, numbingly trivial.

The period from 1996 to 1998 has seen the Web publishing process – which was never complex – become increasingly user-friendly. New software has been developed so that people can create Web pages without needing to understand HTML; indeed, all versions of Microsoft Word since 1997 will save any page of word-processed text as an HTML file.

A few years ago, teachers were sometimes put off publishing their own pages or those of their students because buying Web space, though not expensive, seemed too much of a problem. Recent developments have meant that Web space is now freely available to anyone who wants it, as long as they have an email address.

Several sites now offer free space for anyone with access to the Internet to store their own Web pages. Two of the most successful of these, GeoCities and Tripod, are now amongst the top 20 most visited sites on the Web, offering several megabytes of space to anyone with an email address. The only price to pay is that pages created on these sites

have to carry advertising. These sites aim to create 'communities' or 'neighbourhoods' of users with common interests, and such sites have proliferated since 1997.

ESL and EFL-oriented sites are particularly common in GeoCities. Both Tripod and GeoCities are used by teachers who set up Web pages for a particular class or project: creating an account takes only a few minutes, and both sites have 'wizards' which allow simple pages to be created painlessly.

**Multimedia** Although the first Web pages were composed only of text and low-definition photographs, it did not take long for writers and designers to realise that any digitised information, including graphics, video or audio, could be integrated into a Web page. A mouse click could jump to a paragraph of text, but could just as easily link to a sound clip or a video. The principle was simple enough. The problems (which are far from being solved, and are dealt with later in this book) are first, transmission speed, and second, the wide variety of software that is needed to play such multimedia elements. Until 1995, people wanting audio or video clips had to download the files and store them on their local machine before playing them. Even with a good connection, a short clip could (and still can) take an unacceptably long time to download. The Comenius Web site, for example, has an 'Idiom of the Day'. To

## Country codes

The last part of an Internet address is usually a two letter code which shows in which country a Web site is registered, for example, summertown.co.uk is a UK registered address. (The US system, in which addresses end with 'com' or 'org', gives no indication of where a Web site is located).

Below are listed some of the 240 or so country codes which exist.

AD Andorra	GH Ghana	NL Netherlands
AE United Arab Emirates	GI Gibraltar	NO Norway
AL Albania	GL Greenland	NP Nepal
AO Angola	GM Gambia	OM Oman
AR Argentina	GN Guinea	PA Panama
AT Austria	GP Guadeloupe	PE Peru
AU Australia	GQ Equatorial Guinea	PF French Polynesia
AZ Azerbaijan	GR Greece	PG Papua New Guinea
BA Bosnia and Herzegovina	GT Guatemala	PH Philippines
BB Barbados	GU Guam	PK Pakistan
BD Bangladesh	GW Guinea-Bissau	PL Poland
BE Belgium	GY Guyana	PN Pitcairn
BF Burkina Faso	HK Hong Kong	PR Puerto Rico
BG Bulgaria	HN Honduras	PT Portugal
BH Bahrain	HR Croatia	PW Palau
BI Burundi	HT Haiti	PY Paraguay
BJ Benin	HU Hungary	QA Qatar
BM Bermuda	ID Indonesia	RO Romania
BN Brunei	IE Ireland	RU Russian Fed.
BO Bolivia	IL Israel	RW Rwanda
BR Brazil	IN India	SA Saudi Arabia
BS Bahamas	IQ Iraq	SC Seychelles
BT Bhutan	IR Iran	SD Sudan
BW Botswana	IS Iceland	SE Sweden
BY Belarus	IT Italy	SG Singapore
BZ Belize	JM Jamaica	SI Slovenia
CA Canada	JO Jordan	SK Slovak Republic
CF Central African Republic	JP Japan	SL Sierra Leone
CG Congo	KE Kenya	SM San Marino
CH Switzerland	KH Cambodia	SN Senegal
CI Ivory Coast	KP Korea (North)	SO Somalia
CL Chile	KR Korea (South)	SR Suriname
CM Cameroon	KW Kuwait	SV El Salvador
CN China	KY Cayman Islands	SY Syria
CO Colombia	KZ Kazakhstan	SZ Swaziland
CR Costa Rica	LA Laos	TD Chad
CU Cuba	LB Lebanon	TH Thailand
CV Cape Verde	LI Liechtenstein	TJ Tajikistan
CY Cyprus	LK Sri Lanka	TM Turkmenistan
CZ Czech Rep.	LR Liberia	TN Tunisia
DE Germany	LS Lesotho	TO Tonga
DJ Djibouti	LT Lithuania	TP East Timor
DK Denmark	LU Luxembourg	TR Turkey
DM Dominica	LV Latvia	TT Trinidad & Tobago
DO Dominican Republic	LY Libya	TV Tuvalu
DZ Algeria	MA Morocco	TW Taiwan
EC Ecuador	MC Monaco	TZ Tanzania
EE Estonia	MD Moldova	UA Ukraine
EG Egypt	MG Republic of Madagascar	UG Uganda
EH Western Sahara	MK Macedonia	UK United Kingdom
ER Eritrea	ML Mali	US United States
ES Spain	MM Myanmar	UY Uruguay
ET Ethiopia	MN Mongolia	UZ Uzbekistan
FI Finland	MO Macau	VA Vatican
FJ Fiji	MR Mauritania	VE Venezuela
FK Falkland Islands	MT Malta	VN Vietnam
FM Micronesia	MU Mauritius	VU Vanuatu
FO Faroe Islands	MV Maldives	WS Samoa
FR France	MW Malawi	YE Yemen
GA Gabon	MX Mexico	YU Yugoslavia
GD Grenada	MY Malaysia	ZA South Africa
GE Georgia	MZ Mozambique	ZR Zaire
GF French Guiana	NA Namibia	ZW Zimbabwe
	NC New Caledonia	
	NE Niger	
	NZ New Zealand	
	NI Nicaragua	



The Mosaic program, developed at the National Center for Supercomputing Applications at the University of Illinois, and released on the Internet in 1993, was a Web browser developed to scan resources and files. In contrast to text-based searches, Mosaic offered a graphical interface which was easier to use. The program, available for Macintosh, Windows and UNIX, became significant in shaping the way knowledge could be accessed around the world. Active development on Mosaic is now ceased.



### Tim Berners-Lee biography

<http://www.rukku.com/timberners.html>  
Tim Berners-Lee invented the system that gave rise to the World Wide Web.



### GeoCities

<http://www.geocities.com>  
Amongst the top 20 most visited sites on the Web.



### Tripod

<http://www.tripod.com>  
Amongst the top 20 most visited sites on the Web.

download one idiom such as 'To grab a bite to eat', can take several minutes on a slow connection.

RealAudio provided a solution by using compression techniques to deliver audio in real-time as a continuous stream. This development meant the Web became a broadcasting as well as a publishing phenomenon, and was able to provide both live feeds (for example, from local radio stations), as well as 'broadcast on demand' (such as news services).

RealPlayer, the freely available software used to play RealAudio files, has evolved dramatically since the original software was released. By March 1996, RealAudio on a fast PC (to handle the decompression) was able to produce FM quality. By early 1998, the 'G2' player could handle video in real-time, albeit in a small box and somewhat jerky quality.

The number of sites offering RealPlayer files, especially news services, and the promise of good quality sound, make this a very promising technology for ELT. The BBC now offers a wide range of RealAudio files, and British English newsclips are available elsewhere on the Web. RealPlayer technology is popular with broadcasters because the 'streaming' technology

makes it difficult to save files: they can be watched or listened to only while the Internet connection is open.

Other, similarly powerful compression techniques now allow video and moving graphics to be viewed on a narrowband connection. The most successful of these products, Macromedia's Shockwave, allows for the compression of any video material created in Macromedia Director, a multimedia authoring tool used in many CD-ROM products for ELT. There are already hundreds of sites at which video sequences can be viewed using Shockwave. The quality is imperfect: certainly unsuitable for class use, but adequate for individual use. Like RealAudio, Shockwave does not require the user to download the entire clip. Once the Shockwave 'plug-in' software is downloaded and installed, clips can be viewed in real-time.

Multimedia facilities such as those provided by RealAudio and Shockwave radically alter the use of the Web, and its attractiveness to language learners. The Web is being slowly transformed from a repository for text and photographs into an enormous, interactive CD-ROM. Some technical difficulties (especially bandwidth and lack of

**The number of sites offering RealPlayer sound files makes this a very promising technology for ELT**

### Sound: RealAudio

RealAudio, launched in April 1995, brought 'real-time' audio to computer users. For the broadcaster, RealAudio was difficult to implement; but for the user, all that was needed was a small program, downloaded in minutes. Then, as soon as the RealAudio logo was seen at a Web site, a simple click would 'spawn' the clip. Once the clip had begun, a 'slider' would appear on-screen, similar to those in CD-ROM products. Any section of the clip (which can be over 30 minutes long) could be jumped to, or any part replayed with only a short delay.)

RealPlayer is the latest software for playing RealAudio files.

### And Vision: Shockwave

Shockwave, by Macromedia, is a popular means of viewing animated material on the Web. With a Shockwave plug-in for their browser, viewers can combine sound, video, graphics, text and animation in multimedia material such as games, presentations and demonstrations. The system is similar to RealAudio, in that it enables you to watch video clips on Web sites in real-time. Shockwave is now used on hundreds of sites. Although the quality is as yet imperfect, the widespread use of such software mirrors the growing use of computers as multimedia workstations.

### Usenet

A collection of over 20,000 informally linked newsgroups used for specialised discussions. Newgroups are text-based like email. Most ISPs supply a 'feed' to their customers.

### MOO

Multi-User Domains Object-Oriented. Software which allows many users to interact with each other in real-time and help build an imaginary environment, usually by typing at a keyboard. There are many free games on the Internet available; the sites are accessed using Telnet software.

### maillist

A computer program which redistributes an email message to everyone registered on a list of subscribers.

### posting

A single message sent to a newsgroup or maillist. Postings can be of any length although messages which are very short or very long may be regarded as a breach of netiquette.

### real-time

Discussion or interaction without perceptible time delay. True real-time interaction on the Internet is still very difficult to attain, though several kinds of communications programs get near to it.

### Text, graphics, audio: CD-ROMs

CD-ROMs (Compact Disk Read Only Memory), are now cheaply and widely available. Capable of holding text, (about 250,000 pages) graphics and audio, CD-ROMs offer sufficient capacity to contain encyclopaedias and complex multimedia resources. There are now over 300 CD-ROMs designed specifically for EFL, with many more expected to follow.

A recent development has been the appearance of 'hybrid' CD-ROMs which can be linked to an Internet site for updating. Microsoft produce two English language versions of most of their CD-ROMs: US English and 'World English'. The latter uses British spelling conventions.

# Chat, real-time

standardisation) remain unresolved, and some of the new developments, which enhance interactivity still further, seem sometimes to pose more problems than solutions. But the potential of the Web as a medium for language learning is clear.

## Real-time interaction

Both publishing and broadcasting entail a one-way communication between a source and many recipients. The Internet, however, can be used for 'real-time' interaction in which live conversations can be conducted through the keyboard or, increasingly, via microphones and small video cameras attached to a personal computer.

*Internet Relay Chat* Internet Relay Chat (IRC), developed in Finland in the late 1980s, and allowed multiple users around the world to communicate by splitting the screen into two parts, with the writer's input displayed in one half of the screen and the interlocutors' in the other. Although the word 'chat' is used, communication is text based.

IRC soon became popular worldwide: it solves the problem of many people wanting to chat about different topics by using different 'channels', rather like Citizens Band radio. Many issues discussed on IRC are frivolous, although serious topics are also sometimes dealt with.

An early example of IRC was Talk, a UNIX program which allowed users to

communicate directly by typing text messages on screen. While IRC was confined originally to UNIX it has now spread to other platforms, including PCs and Macintoshes.

To take part in such chat you must use an IRC software program which connects you to an IRC server and allows you to access IRC channels. Chat software is now common on the Web, and is sometimes included as a feature of a Web site. Versions are also offered by private network providers such as CompuServe and America OnLine.

*Multi-user environments* Computer games in which many players could take part developed in the 1960s in the shape of MUDs, or 'Multi-user Domains'. 'Multi-User Domains Object-Orientated' (abbreviated to MOO) is one of the computer scientists' more tortuous acronyms. (Many variants exist, including MUSHes, MUCKs and MUSEs.)

Typical games were set in imaginary worlds or caverns. Players moved around the 'world' by typing commands, such as 'Go East', and reading a description of whatever they encountered. They could interact with each other by typing messages.

MOOs, a later generation of the same kind of game, allowed people to interact not only with other players but with objects: users could create their own rooms or filing cabinets which could be 'unlocked' by other partici-

## IRC ... future English?

Should English Language teachers reinforce Standard English 'rules' such as 'avoid split infinitives'?

Should we accept that International English has different rules? Is it the responsibility of native-speakers to teach a particular variety of English? What if students want to learn a variety of English which appears in no texts books, but which might be needed to make friends in the new global chat rooms of cyberspace?

Whatever the question of the moment in the ELT staffroom, one thing remains certain: the English Language continues to evolve in cyberspace, changing from something we might be familiar with, to something that is clearly a new electronic form.

The fragment below is an example of IRC – Internet Relay Chat – which has developed its own conventions to bring something of the social politics of live conversation and face-to-face interaction to a context created through the keyboard and the computer screen.

Perhaps in the future, the argument will not be over the politics of the split infinitive, but whether a student has appropriately combined both :( and :) with Jingles and IRC conventions and demonstrated communicative competence in new electronic media.

And next – the exam in IRC?

Moonhoo joined (total 22)

<Moonhoo>: cam someone ping me please

<NorthBoy> action:fires a harpoon at Moonhoo

<Wiz09> whispers: U all dont sound to awfully excited :(:

<Big Mix> North the host is a geek though

<NorthBoy> Moonhoo: you're lagged bigtime.

Source: Graddol, 1997. p. 7

**web** **Comenius**  
<http://www.comenius.com>  
An 'Idiom of the Day' to download.

**web** **RealAudio**  
<http://www.real.com>  
Uses compression techniques to deliver audio in real-time as a continuous stream.

**web** **The BBC**  
<http://www.bbc.co.uk>  
Offers a range of RealAudio files.

**web** **Britain in the USA**  
<http://britain.nyc.ny.us>  
British English newsclips available on the Web

**web** **Macromedia**  
<http://www.macromedia.com>  
Macromedia's Shockwave allows video and moving graphics to be viewed on a modem connection to the Internet. Shockwave can be downloaded from the Macromedia site.

**web** **IRC version**  
<ftp://demon.co.uk/pub/ibmpc/winsock/apps/wsirc>  
A popular Windows IRC 'client' programs, WS\_IRC, can be downloaded from here.

**web** **Software for conversion**  
<http://www.2bsys.com>  
The 2bsys site provides downloadable software to allow RealAudio files to be converted to WAVs, and therefore copied. WAV files can be used in Microsoft Windows operating software. Issues of copying are raised on pages 39–43.

pants, revealing files of information able to be read on-screen and printed.

The Internet allows dispersed users of MUDs and MOOs to interact with each other and the environment, using Telnet software to log in to a central computer from any remote Internet site worldwide. Although the software was designed for games, it has been used to provide an interactive environment for language learners.

*Videoconferencing* RealPlayer uses one-way streaming, from the broadcaster to the user. Videoconferencing, which requires data to flow in each direction, is much more demanding: a single frame of video might contain up to one megabyte of information. However, emerging technologies, using 'simple but efficient video frame-differencing and compression algorithms' make it possible to videoconference in real-time.

The most widely used software for video compression is CU See-me, originally developed at Cornell University and now available from White Pine software.

CU See-me works with Windows and Macintosh computers, and allows conferencing with up to eight different sites located anywhere in the world.

From their desktops, users can connect to a 'reflector' site which transmits the compressed data. The quality can be poor, and jerky, depending on the speed of the connection, but it is recognisably video. And with a suitable card in the user's PC and a camcorder mounted in the room, primitive videoconferencing is perfectly possible. It is not the quality of ISDN (Integrated Services Digital Network), and still less what ATM (Asynchronous Transfer Mode) or ADSL (Asymmetric Digital Subscriber Line) promises to offer, but it is available now and, apart from the card and the camera, is free.

CU See-me began development in 1992. Though no longer the only real-time videoconferencing software for the Internet, it is certainly the least demanding in terms of hardware and the most widely used in education.

For example, CU See-me was, in October 1998, being used in 20 primary and secondary schools in the UK, and extensively overseas, including Northern Jiaotong University in China.

### How to get wired

Some Internet users connect via their companies or institutions. Most people, however, depend for access on private (or in some cases state-owned) com-

**Multi-media facilities such as Real Audio radically alter the use of the Web, and its attractiveness to language learners**

home page

The Web page which is first displayed when a browser locates a site. The home page often acts as entry point to a larger collection of pages.

hit

A measure used to record how often a Web site is visited. If a computer user retrieves a single Web page this is usually recorded as one hit. Although monitoring traffic on a Web site is now of considerable commercial importance, there is no standard way of auditing the number of people viewing material.

domain

The name which appears after the @ sign in an email address. The domain name is given to the computer which links to the Internet.

DNS

Domain Name System. The DNS locates the Internet address requested by the computer user. 'DNS entry not found' is a common error message if the you type an incorrect address into a browser.

modem

MOdulator DEModulator. A device which connects a computer to a telephone line. Modems allow computers to talk to each other, by exchanging beeps and whistles. A modem is the usual way of connecting to the Internet from home.

### What's Telnet?

Telnet is a software program which allows you to log directly into computers on the Internet in order to run programs on a remote computer. Your machine becomes merely a screen and keyboard – a remote terminal – to the computer you've accessed.

Telnet used to be one of the most common ways of accessing resources on remote computers, and is still used for accessing library catalogues, multi-user adventure games, and by owners of Web sites testing new software. ISPs, however, do not routinely make Telnet access available, because it is difficult to prevent attempts at 'hacking'.

### Joining Usenet

Usenet is the global network of computers which exchange the messages in newsgroups.

Unlike an email discussion list, copies of Usenet messages are stored on all ISPs' computers where anyone can browse and download them or post their own.

There are many thousands of newsgroups, carrying both frivolous and serious discussion. Some are global, others serve national or very local communities. English used to be the dominant language of Usenet, but the use of other languages is increasing, especially in national newsgroups. You can access Usenet via your Web browser.

### FTP: File Transfer Protocol

File Transfer Protocol (FTP) allows complete files to be transferred between computers. Occasionally, you will come across resources which are available only by FTP – your Web browser should be able to retrieve these files without problem, and will ask you where on your own disk you want the file saved.

Before the growth of the World Wide Web, FTP was the main method of retrieving resources from other computers. It has now taken on a new lease of life: for Web site owners who need to transfer updated Web pages or materials to their ISP's computer. If you decide to create your own Web site, you will almost certainly need to use FTP.

# How do you get wired?

panies known as Internet Service Providers (ISPs).

Since the Internet became widely available in the mid- to late-1980s, most physical access has been via a narrowband connection (telephone plus modem) from the user's home or workplace to the ISP's host computer.

The way charges are calculated varies a great deal from country to country, depending on whether local telephone calls are charged at a flat rate (which encourages people to stay online for a long time), and what the competition is between ISPs.

Recurrent costs usually relate to the cost of the ISP service and local telephone charges. For a monthly fee (typically £10 to £20 in the UK), an ISP will allow a customer to connect to their Internet host computer via a telephone number, provide them with a user name, a password and various pieces of software to use the different facilities of the Internet.

The number and quality of ISPs varies from country to country, and depends on the extent to which the telecommunications sector has been deregulated. By the end of 1998, there were nearly 400 ISPs in the UK, some offering national coverage, others specialising in a particular geographical region or industry sector.

Several UK and US companies are now offering services with no monthly fee. Some, for example BT Click, simply add one pence a minute to your tele-

phone bill. Others require you to telephone a number which charges at a higher rate than a local call.

Recently, there has been a trend towards free connection charges in the UK. Such services, such as Freeserve from Dixons, a UK electrical goods suppliers, raises revenue through sponsorship and by carrying advertising. Other free services, such as ConnectFree, obtain from the telephone company a proportion of the normal charge for the local telephone call needed to connect to the service.

The indications are that competition between ISPs is now fierce: Dixons has become the second largest ISP in the UK in the space of a few months, and is well-placed to promote Freeserve, through its 1,000 UK high-street branches which can be used for distribution and packaging of Freeserve connection, news and associated CD-ROMs.

For a customer seeking an ISP, it is worth remembering that the quality of the ISP dictates to a large extent the quality of the 'Internet experience' itself. It is sometimes the case that ISPs have too few connections, so that the subscriber finds his or her host computer engaged more often than not, or that the ISP can offer only slow connections to the Internet: even where the subscriber has a fast modem, the line rate offered may be far lower than that which the modem can support.



BT Click, launched in October 1998, is a 'pay as you go' service, offering people with a PC and modem access to the Internet without paying subscription fees or making an annual commitment to an ISP.

The neatly-marketed service adds one pence to your telephone bill for every minute that you're connected. The latest development is BT ClickFree.

## Is it all really free?

There is increasing pressure to provide free Internet access. In February 1999, the UK ISP Virgin announced the end of its subscription fees as competition to gain customer bases grows. UK users can now find many deals for cheap or free access: Cable and Wireless Internet Lite; X-Stream; ConnectFree; or BT ClickFree. Major retailers are also joining the rush, from software suppliers to high-street stores such as Tesco, Dixons, and the US-owned Toys R Us. Not surprisingly, free access has met with a mixed reaction: the Internet Service Provider's Association (ISPA) has emphasised that customers should check speed of service, reliability, quality, and hidden costs of support.

## The essential items

- 1 A computer. Practically any kind is sufficient for email and text-based services, although a modern, multimedia capable computer may be needed for the more demanding uses, such as videoconferencing.
- 2 An Internet Service Provider (ISP). Some ISPs provide simple access services, others, such as AOL (America OnLine) or Compuserve, provide, and charge for, a range of special information services.
- 3 A modem. This is the device which connects your computer to the telephone line. Modems have increased in speed and decreased in price in recent months.
- 4 Software. Your ISP may give you software which is already set up to allow your computer to dial up their computer and establish the connection. They may also provide you with other programs for popular activities. If not, there is a wide variety of free software available, often available for downloading from the Internet.

Your Web browser will probably include all the necessary functions to get you started, and you can add extra extensions (plug-ins) to handle the latest forms of multimedia.



### White Pine

<http://www.wpine.com>

CU See-me is now available from White Pine software.



### CU See-me Directory

<http://www.gsn.org/cu/index.html>

CU See-me is the least demanding in terms of hardware and the most widely used. The above site is a useful place to go for details on schools using CU See-me.



### Listing of UK Service Providers

<http://www.limitless.co.uk/inetuk/providers.html>

In the UK, by late 1998, there were nearly 400 ISPs, some offering national coverage, others specialising in a particular geographical region or industry sector.



The resources available in cyberspace are growing daily: so too do the opportunities for ELT professionals in many fields. And, whatever area of ELT business you're engaged with – commercial development, materials creation, publishing, as an agent or provider, teacher, or student – there now exist some exciting opportunities ahead.

### Email and newsgroups

Since the late 1980s schools worldwide have used email for international communication activities, ranging from simple penpal, or rather 'keypal' exchanges to full-blown multicultural projects.

The attraction of email is simply speed: participants need not wait days or even weeks for a response, but can receive a reply in a matter of hours.

Several organisations have taken seriously the new demand for keypals. Comenius provides a person-to-person keypal registration on payment of a nominal fee, and other organisations offer not only correspondents, but produce reports on projects and suggestions for email tasks. Irvine (1994) and Warschauer (1995A) suggest a wide range of email-based activities.

Elsewhere, schools offering email

tutoring are emerging. Typically, students register for courses conventionally with cheque or credit card, are issued with paper- or disk-based materials, and use email to contact their personal tutor for marking, feedback or learner support.

Unlike much of the Web, email is a simple, reliable and proven technology. It is not surprising, therefore, that it has emerged as a viable commercial platform – if only a niche one.

Several interviewees commented that, for all the bells and whistles of the World Wide Web, it was the simple email message that they personally found most useful on a day-to-day basis.

*Discussion lists* Such lists have been a constant feature of the academic world, especially in the US, for over a decade, and offer particular advantages to ESL and EFL. Practical, active correspondence with other interested, informed and friendly participants can be of great support and appeal to students and to teachers alike.

Unlike a conventional, physical debate, everyone has a chance to state their case. Gender, race, social position and professional status are irrelevant; no individual can 'shout down' another; the debate is not constrained

It is likely that there are between 800 and 1,000 Web sites devoted to language learning activities or materials

### Up to no good?

Beware, for the Web has its own share of mischief-makers, and people may not always be who they seem – a tendency encouraged perhaps by MUDs and MOOs where participants can take on fictional personas.

Essentially, some postings may be misleading. There is even a newsgroup devoted to 'inspired mischief'. How can you protect your students? Well, they may understand the culture of cyberspace, but you might warn them that one form of mischief involves providing misleading guides to English usage, in response to innocent questions from non-native speakers in such forums as misc.education.language.english

### Local phone charges too high?

For many users, irrespective of where in the world they surf, the cost for receiving data from the Web via the telephone line is charged at the local rate. But the charge for local calls varies considerably across the world and often creates a barrier to Internet access.

In some parts of the world, local telephone calls are free, leaving only, for example, a monthly charge set by an Internet Service Provider, which can appear modest. In the US, many families may have a second phone line dedicated for email and Web access. In other parts of the world, obtaining a home telephone line remains only a dream.

### flame

An emotional, usually angry, communication by email. There are cultural politics around flaming: some people will lay 'flame bait' – a deliberately provocative statement – in the hope of creating a 'flame war' – a sudden clash of opinions from two opposing groups of people. Having lit the firework, they sit back and enjoy the show.

### FAQ

Frequently Asked Questions. An Internet catechism, used to distribute advice in the form of a list of common questions, together with their answers. Most newsgroups have a FAQ which is distributed regularly, as general advice to newcomers and to avoid the repeated posting of the same old question.

### troll

A troll is a traditional Scandinavian goblin who lives under a bridge and ensnares passers-by. Trolls are also a hazard of cyberspace, a form of entrapment – often malicious – in which a disingenuous posting to a newsgroup or discussion list is intended to provoke a response from unwitting correspondents. It may be 'flame bait', (see above) or it may be a more subtle attempt at advertisement in the guise of a request for information.

### keypal

Computer penpals. Keypals can be of great benefit to language learners, offering mutual support and advice.

### lurker

Someone who receives email messages and information from a discussion list but does not actively participate. Being a lurker is not necessarily negative: lists are often of much benefit whatever your level of participation. And if everyone on the larger lists actively posted messages it would overwhelm other members.



The TESL list offers the visitor a variety of sub-groups, and is a useful source for discussion, tips and resources. Lesson plans, worksheets, suggestions for grammar and vocabulary games also makes it a valuable point of contact for the EFL/ESL teacher.

# Teaching & learning

by time; and there is an automatic transcript of the proceedings. In addition, list users require no special software beyond email, thus opening participation to a much wider range of participants than any Web-based service. And, perhaps most importantly, many lists are free: set up with a grant from the host University or a third party.

Some lists use very little human agency. Other lists are moderated, which may support teachers mindful of what material students might access, while lists can be found which offer personal help to users. The work of the moderator, mentor, tutor, or administrator, is sometimes carried out on a voluntary basis, or sometimes managed as a professional, charged-for service.

One of the most successful free ELT lists, TESL-L, has grown to 25,000 members since it began in the early 1990s. In addition to general ELT issues, it also caters for special interests: subgroups include TESLCA-L, for computer assisted language learning, TESLJB-L, for job announcements and working conditions, TESLMW-L for materials writers, and many more.

There are now many hundreds of academic lists, and at least a dozen of relevance to ELT professionals.

Lists are no panacea, however, and several people interviewed during the preparation of this book expressed reservations about their use, partly because of the sheer quantity of text messages they generated, but mainly

because of the variable quality of the contributions. Since most free lists – certainly for ELT – are open to all comers, postings can often be ill-thought out or simply irrelevant.

**Student lists** Though most lists are intended for teachers, lists for students are available. A problem with keypal projects is that students sometimes do not get replies, or that replies peter out after only a few exchanges.

The student lists are designed to overcome this problem by putting participants in touch with a far larger number of correspondents than normal email would allow. The most successful student lists, at Latrobe University in Australia, offer different topics (current affairs, films, music and so on), and in some cases different levels.

**Newsgroups** There are no newsgroups solely devoted to British ELT. Yet several newsgroups do carry topics which may be relevant to English language teachers seeking new resources and materials. One of the most active –

– carries a useful and extensive Frequently Asked Question list related to ESL/EFL.

In principle, newsgroups can be used with classes. Groups of students with particular interests (there are many newsgroups for politics, food, music, or current affairs) could follow discussions for a few days, then post their own

## Computer room or classroom?

Practical tasks for young students based around the computer:

Pair experienced users with first-time users and let the students take over the teaching of browsing to themes of food, music, clothing and international style.

Run forums for students to bring new information on which sites are hip, what's available when you get there, and to explore topical issues on Internet politics.

Set research projects with lines of inquiry which involves identifying audio, text or graphics sites.

Negotiate timetables or access; allocate provision; maintain records of Web files; draw up plans for the arrangement of equipment; create specifications for upgrades and installations ... And does it all work to teach, encourage and inspire?

I had arranged through the help of a particular site for my students to take part in a chat with other students from all over the world. When we got connected the students began communicating with learners of English from Brazil and Argentina. After a while my students were unable to participate because they had nothing to say about trendy matters such as music and films. My students started to feel embarrassed. Obviously their counterparts had spent a lot of hours browsing their favourite sites on the Internet and were well aware of all the last news about them. My students knowledge about such matters was considerably outdated!

I suppose, looking back to that unfortunate moment, that it was then that my students realized the importance and directness of the Internet. Many of them since then have accessed the Internet and use it for updating their knowledge. (Dimitris, email correspondence)

**web Multiculturalism**  
<http://www.hut.fi/~rvilmi/project.html>  
Ruth Vilmi, at the Helsinki University of Technology (HUT) has reported extensively on a variety of large scale international projects.

**web Comenius**  
<http://www.comenius.com>  
Comenius provides a person-to-person keypal registration on payment of a nominal fee.

**web St Olaf's University**  
<http://www.stolaf.edu>  
St Olaf's University offers not only correspondents, but also produces reports on projects and suggestions for email tasks.

**web Deja News**  
<http://www.dejanews.com>  
Many discussion lists can also be accessed through the World Wide Web at the Deja News site.

**web Directory of discussion lists**  
<http://www.liiszt.com>  
There are now many hundreds of academic discussion lists, and at least a dozen of relevance to ELT professionals. The above is a searchable directory of email discussion lists.

**web Student list**  
<http://www.latrobe.edu.au/www/education/sl/si.html>  
The most successful student list at Latrobe University in Australia offers Lists with different topics.

messages and await responses. Some groups (e.g. uk.music.folk, or alt.food.-wine) are well-moderated and even urbane, and a good source of authentic language materials.

Despite the many advantages of newsgroups, teachers tend to be wary of allowing access to Usenet. Unless the group is carefully chosen, the quality of both language and content can be poor, and sometimes offensive.

Newsgroups represent, much more than the Web, or email, or discussion lists, both the best and the worst features of the Internet. At their best, they are an excellent source of up-to-date information, ideas and comment, often supplying news before it reaches the mass media. At their worst, they are trivial, tacky or irrelevant; difficult material for a teacher to make good.

Nevertheless, newsgroups continue to enjoy some popularity amongst teachers, especially those who wish to dip into discussions occasionally, rather than be inundated with the email that lists can produce.

Newsgroups can be browsed easily in a way that is impossible with lists, and newsreader software allows 'threading' to follow discussion topics more easily.

### The World Wide Web

The number of ESL and EFL sites on the Web is large, and increases each month.

Accurate numbers are impossible to gauge, but an unscientific indication of the growth of materials is the fact that a search for ESL in June 1996 found 60,000 hits; by September 1998, this had increased to over 390,000!

From a similar estimation, it is likely that there are between 800 and 1,000 sites now specifically devoted to language learning activities, resources or materials.

On some ELT sites, learners can post questions on usage, and receive comprehensive answers

In the early years of the Web, most resources for learning, unsurprisingly, were based in the US: colleges and universities there were much more likely to have Internet access than their European counterparts, and to have had this access for significantly longer. This situation has changed significantly since the mid 1990s, with sites being established in Japan and Korea, and also throughout Europe.

No comprehensive guide to ELT resources for learning is available, but the Frizzy University Network (FUN) and the Linguistic Funland give some idea of the range.

The most comprehensive collection is currently at the Internet TESL Journal

web

#### The Frizzy University Network

<http://thecity.sfsu.edu/~funweb>

The Frizzy University Network (FUN) gives some idea of the range of resources for learning available.

web

#### Linguistic Funland

<http://www.tesol.net> or [www.tesol.org](http://www.tesol.org)

The Linguistic Funland also gives some idea of the range of resources for learning available.

web

#### TESL Journal

<http://www.aitech.ac.jp/~iteslj>

The most comprehensive collection is currently at the Internet TESL Journal site, with over 30 categories and over 3,500 entries.

web

#### Impact Online

[http://www.ed.uiuc.edu/impact/impact\\_homepage.html](http://www.ed.uiuc.edu/impact/impact_homepage.html)

Impact Online offers about 20 short texts at intermediate and advanced level.

web

#### The Comenius Group

<http://www.comenius.com/fable/complete.html>

The Comenius Group has a section called 'Fluency Through Fables', a selection of fables with follow-up multiple choice and 'true or false' exercises.

web

#### University of Illinois' Division of English as an International Language

<http://deil.lang.uiuc.edu/web/pages/readinglist.html>

Provides extensive listings of authentic reading materials.

finger

A program which locates people on other Internet sites. A computer user can, using such a program, type in an Internet email address and retrieve information about another Internet user. Many people now provide the same information on their home Web pages and finger is falling into disuse.

router

A device which routes data between networks, like a traffic controller. Routers balance out traffic; filter data and control sudden changes. Faults in routers are one of the main sources of technical failure on the Internet.

bridge

A device which connects two networks which may each work on different systems; bridges thus help networks perform smoothly.

MUD

Multi User Domain. Originally a form of computer adventure game which allowed several players to interact with each other. MUDs can also be used for more serious purposes and have become a popular way of creating an exciting, interactive environment for language learners.

janet

The UK academic and research network. An acronym for Joint Academic Network.

### How ESL is growing on the Web

The number of ESL and EFL sites on the Web is growing month by month and many can be found by simply entering 'ESL' or 'EFL' as a search term in the AltaVista search engine. A search for ESL in June 1996 found 60,000 hits; by February 1999 the number was nearly 400,000. A search on EFL in February 1999 found 86,337 Web pages.

First to appear on AltaVista listings for for ESL are self-study quizzes, then International Educational Consulting; then homepages, magazines, activities...

For EFL it's links to major sites, services, resources, 'edutainment' and examination boards.



# Reading, writing, listening

site, with over 30 categories and over 3,500 entries.

**Skills practice on the Web** There are many resources available for teachers, materials developers and students. Yet, as in any filing cabinet, some resources will prove to be excellent, and others simply out of date and undemanding. Here resources are mapped out in simple terms of reading; listening and writing.

**Reading** The amount of purpose-written ELT material on the Web remains small. Impact Online, for example, a joint project of the University of Illinois College of Education and Passport Educational Publishing, offers about 20 short texts on current events, health, and so on, at intermediate and advanced level, complete with detailed vocabulary help and the facility to call up a sound clip of glossary entries. No materials have been added since March 1995, however: Impact seems to have joined the ranks of 'ghost sites'.

The Comenius Group has a section called 'Fluency Through Fables', a selection of fables with follow-up multiple choice and 'true or false' exercises. There are only six passages, and each is only two or three short paragraphs in length. (The section was last modified in November 1997.)

In spite of the fact that many sites list 'Reading Activities' in their

attractively-formatted menus, most are links to authentic, unmediated resources such as online newspapers or magazines. The extensive listings at the University of Illinois' Division of English as an International Language are a case in point.

**Listening** In contrast to the amount of written ELT material available from the Web, the amount of listening material has grown significantly since 1996.

Rong-Chang Li, at the University of Illinois at Urbana-Champaign, has a section called 'Learning Oral English OnLine', offering seven short elementary dialogues which can be downloaded in the 'old-fashioned' way, plus (printed) drills, and a massive (1.2 gigabyte) file on 'Health Questions'.

Increasingly, however, sites are using multimedia plug-ins. For example:

Bryan Rhodes' Takako's Great Adventure is a Web version of an existing cassette-based set of materials for intermediate students, and requires Shockwave and JavaScript.

Kent Trickle at the University of Florida has set up an ESL Wonderland with activities on Race Relations, the Death Penalty, Alien Abductions etc, using RealPlayer, chiefly for listening activities, and more recently for watching video (on a 56K or better connection.)

Randall Jones' Cyber ESL Listening

## Publish and be damned

In its audacious uselessness – and that of thousands of ego trips like it – lie the seeds of the Internet revolution. The Internet allows everything: anyone can be a publisher, and publish anything he wants. Set up a home page to show all comers what you are watching on TV at that moment, and it will stand side-by-side with IBM, competing equally for visitors. (*Economist*, The Accidental Superhighway, July 1995)

Get hold of a Web site – many are offered free as part of access deals – and have your students create, write, and prepare work for publication to the world, whether it's poetry, news, lyrics, stories, word puzzles, monologues, dialogues, a TV script or a three-act play.

Teach access and browser skills and start discussion or research groups pursuing topics from copyright and intellectual property rights to correct referencing and the roles of authors, illustrators, photographers, musicians and designers.

Create a Web page magazine; publish listings or a directory of local services for visitors. Try Web-based activities, puzzles, games, quizzes and readings – create them for publication, or download them for class.

Each of these provide opportunities for the learner to research, write, design, scan and search, select, compose, process and present material.

With their work on display, not on the wall but the Internet, students have the satisfaction of knowing that their ideas are available for anyone – family, friends, colleagues – to access and read.

The Internet, of course, is not simply a one-way road. Students can download data, and try a range of different packages to manipulate or combine information and graphics which they can find. And when they've got something new, publish!



### Learning Oral English OnLine

<http://www.lang.uiuc.edu/lr-li5/book>

Seven short elementary dialogues which can be downloaded.



### ESL Wonderland

<http://grove.ufl.edu/~ktrickel/index.html>

Kent Trickle at the University of Florida has set up an ESL Wonderland with activities using RealPlayer.



### Bryan Rhodes' Takako's Great Adventure

<http://www.faceweb.okanagan.bc.ca/tga>

A Web version of an existing cassette-based set of materials for intermediate students.



### Cyber ESL Listening Lab

<http://www.esl-lab.com>

Randall Jones' Cyber ESL Listening Lab has over 100 listening clips in RealPlayer format



### Plumb Design

<http://www.plumbdesign.com/thesaurus.html>

Visual Thesaurus, exploring language through a visual interface.

Lab has over 100 listening clips in RealPlayer format, ranging from short exercises to extended conversations and divided into three levels.

In each case the materials are available because of the enthusiasm of individuals. They are technically interesting, and may suit the needs of some independent learners, but they do not constitute, in themselves, a fully-fledged listening resource.

**Writing** Writing is better served on the Web. Purdue University's 'On-Line Writing Laboratory' (OWL) is one of several which provide worksheets and guided writing exercises for students. OWL contains a wide variety of documents, covering punctuation, sentence structure, typical errors, and has extensive examples of native-speaker usage.

**Grammars and reference** Several 'online grammars' exist on the Web. Hiway offer a rather lightweight grammar aimed at elementary students, while the Digital Educational Network (DEN) has a much more comprehensive offering. (Anthony Hughes' On-line Grammar won a 'Best Educational Sites Today' award from

Education World.) Both are paper-based grammars which have been put up onto Web pages, and only a few hyperlinks have been added (to sound files, in DEN's case).

An interesting feature of the DEN site is a 'grammar clinic', run by Lydbury Business English Centre. Users can post questions on usage, to which comprehensive answers are provided. DEN recorded an average of 3000 'hits' per month on this section alone in 1998.

LinguaCenter, at the University of Illinois, offers an alternative approach, explaining to students how to use the search facilities of the Web to retrieve examples of usage, for example, 'Hunting "nevertheless" with WebCrawler'. The activities are regularly updated.

Generally, the Web is not a useful source for reference materials such as dictionaries. The Internet TESL Journal site lists over 30, but many of these are arcane (Unofficial Rap Dictionary, Rap Dictionary). Many of the reference works are there because they are out of copyright. Webster's, for example, is available online at a number of sites, and some interesting attempts are being made to create dictionaries by soliciting contributions from Web users.

**The Web has interactivity built into it, in a way that paper-based materials can never have**

### Telnet

Software with which you can log into computers on the Internet and use online databases, chat services and library catalogues. Telnet allows you to run programs on a remote computer as if you were at a local terminal.

### browser

A program on your computer, for example Netscape or Explorer, which can read Web pages. Many browsers are now multifunctional and can also retrieve files, send mail, and read newsgroups.

### search engine

A program on an Internet computer which allows you to search for specific information. Search engines are massive indexes for the resources on the World Wide Web. Many search engines now exist on the Web, including AltaVista, Lycos, Open Text, Webcrawler and Excite.

### bookmark

A list of your favourite Web sites: making a list of frequently visited or referenced sites simply saves time.

### cookie

Data passed by a Web server to a browser when a computer user visits a Web site. The data is held on the user's own computer and passed back to the Web server when it asks for it. An ecommerce site, such as a bookshop, would not be able to keep track of your shopping choices without using cookies.



#### On-Line Writing Laboratory

<http://owl.english.purdue.edu>  
Purdue University's 'On-Line Writing Laboratory' (OWL) is one of several which provide worksheets and guided writing exercises.



#### Hiway

<http://www.hiway.co.uk/ei>  
Several 'online grammars' exist on the Web. Hiway offer a lightweight grammar aimed at elementary students.



#### Grammar ideas at DEN

<http://www.go-ed.com/english/grammar>  
The Digital Educational Network (DEN) has a comprehensive grammar offering.



#### Grammar clinic by Lydbury

<http://www.go-ed.com:8080/~3>  
An interesting feature of the DEN site is a 'grammar clinic', run by Lydbury Business English Centre.



#### University of Illinois

<http://deil.lang.uiuc.edu/web/pages/grammarsafari.html>  
LinguaCenter explains to students how to use the search facilities of the Web to retrieve examples of usage.



#### Internet Grammar of English

<http://www.ucl.ac.uk/internet-grammar/>  
An online grammar from the Survey of English Usage, University College, London.

### The possibilities with dictionaries

Dictionaries online are a growth area: checking references is the type of purposeful, brief activity for which the Web can be well-suited. It is as quick and easy to check the Web as it is to locate and find the word you want in a dictionary from the shelf.

Moreover, a good variety is available on the Web, and this is likely to increase: students may find bi-lingual dictionaries or dictionaries of varieties such as Spanglish; they may find dictionaries for specialist jargon, word origins, quotations, proverbs, with sound and pictures, and inviting them to make amendments, additions or glossaries.

# Grammars & reference

Yet there are interesting resources available. Wordsmyth, a new online dictionary and thesaurus, began in the mid-1980s as work for a Japanese electronics company.

The Collins CoBuild Student Dictionary is available online at the Ruhr University, Bochum, as part of a joint project which also provides sounds and pictures to accompany most headwords. And Plumb Design's Visual Thesaurus uses ThinkMap software to create a visually stunning 3D thesaurus where words, their synonyms, antonyms and cognates swirl on the screen in a constantly changing display.

By and large, however, it is unlikely that publishers will make available high-quality reference works online until solutions have been found to the problems of charging and copyright.

*Using non-ELT resources* One area which may seem of great value is the great range of authentic material available on the Web. Yet the problems associated with using this wealth of resources are similar to those experienced by teachers who use multimedia encyclopaedias and similar resources on CD-ROM.

One of the first problems teachers face is that of access: few schools have computer rooms which allow a whole class to access these resources simultaneously.

Another problem is navigation: given the range of the material, how

can students be helped to find materials which they can understand and learn from?

There is also the issue of study skills: do students need to acquire a different set of skills in handling screen-based information?

And there is the thorny problem of the nature of the learning that is taking place: are students simply and idly scavenging, or are they acquiring something more useful?

The ability of hypertext to transport the user from clip to clip, from site to site, is very beguiling. But, as Diana Laurillard points out:

As an educational medium, enabling the student to develop their academic understanding, it (hypertext) has little to offer. The claims made for its potential in education should be examined with care, because on the one hand it is nothing more than a small but beautifully connected library, and on the other hand, by its very nature, it undermines the structure of the 'texts' it uses and reduces knowledge to fragments of information. Laurillard (1993), p. 122.

Yet the richness – and the allure – of material of this sort available on the Web is difficult to exaggerate. Even a small English market town such as Saffron Walden will often turn out to have a significant Web presence, with maps of the region, directories of local

## Online dictionaries: Wordsmyth

Updated online dictionaries and references are difficult to locate online, since the transferring of print to electronic form is subject to various copyright restrictions. Yet dictionaries written for an online audience will grow: some will be developed specifically for online publication; others will emerge, grown from research projects and from the development of products for sale over the Web.

The following comment from Bob Parks, creator of Wordsmyth online dictionary and thesaurus, shows one such genesis.

'A staff of 2-3 editors and 8-10 writers (mostly part time) worked for six years on the project. We wrote the material with an editing manual directed toward a general high school educated audience. In 1991-2 IBM acquired some non-exclusive rights to the dictionary, and supported the development of the thesaural portion of the material. Our model was to meet or exceed the material presented in Houghton-Mifflin's 'Rogets II'.

Our material is superior in the respect that it has definitions for all important senses of a word, regardless of whether there are synonyms. And we also systematically included 'SIM' (similar, or near synonym) fields, while 'Roget's II' includes them only occasionally.

There is only one work which is near to the scope and quality of our work: 'The Oxford Dictionary and Thesaurus' (Oxford University Press, 1996). Their work is not in electronic form, however. And they do not systematically distinguish synonyms and similars.

One further feature that is made possible by electronic access is the links to the WordNet lexical database. My intention is to distribute the material widely in education as part of a program involving teachers and students in a participatory process.'

**web** **Multilingual dictionaries**  
<http://www.willamette.edu:80/~tjones/IDP>  
Multilingual dictionaries being developed as part of the Internet Dictionary Project.

**web** **Wordsmyth**  
<http://www.wordsmyth.net>  
A new online dictionary and thesaurus, began in the mid-1980s as work for a Japanese electronics company.

**web** **Wordsmith Tools**  
<http://www.oup.co.uk/elt/software>  
A downloadable charged-for suite of concordancing tools

**web** **CoBuild Student Dictionary**  
<http://www.linguistics.ruhr-uni-bochum.de:8099/ccsd>  
The Collins CoBuild Student Dictionary is available online at the Ruhr University, Bochum.

**web** **Dictionaries and reference**  
[http://www.aitech.ac.jp/~iteslj/links/ESL/Dictionary\\_s\\_and\\_Reference\\_Materials](http://www.aitech.ac.jp/~iteslj/links/ESL/Dictionary_s_and_Reference_Materials)  
The Internet TESL Journal site lists over 30 dictionary reference materials.

**web** **Small town, big presence**  
<http://www.webserve.co.uk/clients/saffire>  
An example of a small English market town, such as Saffron Walden, with a significant Web presence.

shops and businesses, photographs of the town, advertisements, and listings of forthcoming events.

If this were all the Web offered, it would be little more than a convenient means of retrieving information which would otherwise have to be obtained via the channels teachers have used for years: friends, tourist offices, timetables, travel agents and the like. But the Web offers some very specific opportunities for teachers and learners, not least the fact that it is engaging because it is interactive.

A good Web site, for example, differs significantly from a set of glossy brochures: a Web site can be searched for specific information and the data it provides can be manipulated. The nature of the Web allows people access to other learners and readers, of different status, experiences and responsibilities. On the Saffron Walden Web site, for example, visitors can join discussions on road and traffic problems, or enter the debate on local sports facilities, or can post queries about what commercial services are available. Whether they get a response is of course a different question: the point is that the Web has interactivity built into it, in a way that paper-based materials can never have.

**Several newsgroups carry topics which may be relevant to English language teachers seeking new materials**

The list of non-ELT resources of potential interest to teachers is endless. Examples might include:

Drew's Script-o-Rama, a collection of thousands of downloadable scripts from films and TV programmes.

The International Lyrics Server, a searchable database of thousands of song lyrics.

The Corbis Picture Experience, a searchable collection of 1.3 million high-quality photographs from the Corbis (Microsoft) collection.

The availability of such resources as these is one thing, but finding them is quite another.

Learning too how to use the Web effectively, incorporating resources into effective tuition and study is one of the skills both the teacher and learner needs to acquire.

### Real-time communication

Conventional email, discussion lists and newsgroups are examples of deferred, or asynchronous communications. Holding a 'real' discussion is impossible: even good systems can delay email transmissions by two to ten minutes, and a message might occasionally take

**protocol** A set of instructions defining the type of low level communication used by a computer systems.

**TCP/IP** Transmission Control Protocol Internet Protocol, or the standard communication system which binds the Internet. IP collects data into small packets and sends each packet to the correct address; TCP ensures the packets are sent and re-assembled in the correct order.

**CGI** Common Gateway Interface. A set of standard rules which determine how software and the Web server communicate with each other.

**PPP** Point-to-Point Protocol. A protocol which allows a computer to connect to the Internet via a modem and a normal telephone line. Most Internet users will use a dial up link which employs PPP.

**ping** Packet Internet Groper. A software program which tests the connection to a remote computer and measures the time taken for data to travel.

### Joining the discussion lists?

You'll quickly become used to what's acceptable and what's rejected on each discussion lists – on some lists there'll be powerful voices who set parameters for 'good behaviour' but basically, posting 'rules' are simple, as much drawn from social face-to-face interaction as from emergent conventions of the keyboard.

Contribute points which forward and develop the debate. Be concise, and polite. Don't shout with capital letters, or post messages which simply say 'me too', quoting large chunks of someone's text. Use humour and irony carefully – it may not translate as you think on the viewer's screen. Be careful when you flame. And never spam...

### Emoticons

Emoticons are becoming a regular feature of emails :- ) for a smile, and :-( for a frown are now quite common.

Others you may encounter are often used to describe the emailer themselves, to indicate mood, tone or physical characteristics; clearly many more can be invented:

- ;-) wink
- :0 mouth wide open in amazement
- :-{ moustache and smile
- :-{} moustache, beard and smile
- 8-) someone wears glasses
- :\*) an inebriated emailer

### By the way...

Internet English is developing its own forms of communication which may provide the stuff of future language lessons in themselves.

Email authors and contributors to discussion lists often use abbreviations and acronyms which can be useful, bewildering, or irritating, depending on your point of view.

Some short forms which have gained widespread popularity are IMHO, for In My Humble Opinion; BTW, By The Way; AFAIK, As Far As I Know; and the appreciation-marker LOL, Laughs Out Loud. But perhaps the ultimate expression of irony is ROFL: Rolls On Floor Laughing.

# Conversation classes

even longer to arrive. However, the Internet communication is not restricted to email: as we described in Section 1, there exist a variety of systems which allow users to communicate more directly, in real-time.

*Internet Relay Chat* IRC was confined originally to UNIX, and therefore little used in ELT, although the English Language Division of Jalan University, Malaysia, was active as long ago as 1994. One of the teachers commented:

One of the problems with IRC usage is that you might get addicted to it. Just like a real-life conversation, it can be difficult to leave, especially when the topic of conversation interests you. Since the users do not know each other, they might be more open in giving their opinion. This feature of IRC can be an advantage to the shy students. It gives them the opportunity to express themselves freely. (Daud, 1994)

Just as keypals seem to be more popular than penpals because responses come more quickly, so IRC appears to be extremely appealing to many students. Whether it is the 'instant gratification', or the anonymity, or merely the attraction of a new medium is uncertain; but it is certainly the writer's experience that some students become fascinated by the simple act of 'chatting' around the world.

*MUDs and MOOs* Also popular with students are the Multi-User Domains and Multi-User Domains Object-Orientated (MUDs and MOOs, described in Section 1).

Increasingly, MOOs have evolved away from adventure games and into other kinds of virtual environments. Dozens are now available publicly on the Internet. Several have developed into 'virtual universities', in which the dungeons and caves of the old MUDs are replaced by libraries, student common rooms, classrooms, lecture theatres and self-access facilities.

Some, such as Diversity University, have a wide range of facilities and many faculties. One, SchMOOze University, is entirely devoted to EFL and ESL. It offers a variety of language teaching games and activities, an internal mail system, access to teacher-wizards for visiting students, and the facility for students to create their own 'living space' in a dormitory – an appealing venue for many different students. In addition, SchMOOze regularly hosts real-time meetings of teachers at the 'Netoric Cafe'.

Real-time conversations, whether on IRC or in an imaginary university, have nothing of the richness of classroom interaction, still less of real-life. However, for the individual whose life-style or commitments do not allow attendance at a regular class, or who rarely, or perhaps never, gets the chance to interact with native speakers,

## Learning how to write-speak

Is there anything that might differentiate the ways people use language in electronic discourse from those in, for example, an exchange of signals by flags, a series of postcards, letters to newspapers, or successive sections of an epistolary novel?

Before deciding whether to classify electronic discourse in any particular language as a genre or a register of that language, we must begin with preliminary description and analysis of what electronic discourse seems to be or do, and what people choose to do with it. (...)

Writing is often seen as space-bound, static and permanent, whereas speaking is viewed as time-bound, dynamic, transient. Electronic communication, written on keyboards and read on computer screens, has many characteristics of both speech and writing.

...electronic discourse is writing that very often reads as if it were being spoken – that is, as if the sender were writing talking. (...)

Electronic conference discourse is like conversation in that it presents a number of performance features ... The features may also be graphic. Wilkins (1990) notes the use of all capital letters, the creation of emoticons, the use of punctuation to signal humor or irony or a sense of intimacy.

In her collection of multiparty conversation on a conferencing network for an electronic communications utility over a three-months period, Wilkins (1990) observed that what kept the conversation flowing was not references by name or number or established conversational sequences.

Instead, the 'conversational topic was maintained through lexical repetition, synonyms and shared cultural knowledge'.

B. H. Davis and J. P. Brewer, (1997) p. 2–4

**web** **Drew's Script-o-Rama**  
<http://www.script-o-rama.com/index.shtml>  
A collection of thousands of downloadable scripts from films and TV programmes.

**web** **International Lyrics Server**  
<http://www.lyrics.ch/search.html>  
A searchable database of thousands of song lyrics.

**web** **The Corbis Picture Experience**  
<http://safari.altavista.digital.com>  
A searchable collection of 1.3 million high-quality photographs from the Corbis (Microsoft) collection.

**web** **MUD directory**  
[http://www.yahoo.com/Recreation/Games/Internet\\_Games/MUDs\\_MUSHes\\_MOOs\\_etc](http://www.yahoo.com/Recreation/Games/Internet_Games/MUDs_MUSHes_MOOs_etc)  
For one of the many directories to Multi-user Domains.

**web** **Diversity University**  
<http://schmooze.hunter.cuny.edu:8888>  
Diversity University has a wide range of facilities and many faculties.

**web** **SchMOOze University**  
<http://schmooze.hunter.cuny.edu:8888>  
SchMOOze University is entirely devoted to EFL/ESL. Telnet access is available via SchMOOze's Web page.



they can be extremely motivating.

Paul Snookes, who has used Diversity University extensively, comments:

I once ran an experimental class on a MOO with several of my own Japanese students who I taught once a week in a real class. We were not in the same room for this experiment. One of the students had never spoken to me or made any eye contacts in the class. However, on the MOO I couldn't shut her up! The next time I saw her in the real classroom again she still didn't have the courage to speak to me face to face. Many of the academic papers make reference to the emboldening effect that the MOO environment has on participants. (Personal correspondence. See also Snookes, 1995)

**The old MUDs are being replaced by libraries, common rooms, classrooms, lecture theatres and self-access facilities**

The ability to be able to exchange messages with users around the world in a matter of moments and for the cost of a local call is certainly exciting. The fact remains that much of this communication will be between non-native speakers, without teacher direction or supervision.

A great deal more research is needed into Computer Mediated

Communication (CMC), and it may be a mistake to assume that keypals and MOO friends are automatically 'a good thing'.

*Web chat* As with other Internet facilities, 'chat' is becoming available via the World Wide Web.

A typical example is AcmeWeb, which gives access to a variety of 'chat rooms' via normal Web pages. The chat pages themselves present the contributions to the discussion in list form. At the bottom of the page, a form is opened in which the user can type in his or her contributions. When the 'Send' button is clicked, the message is sent to the page, which is then refreshed, showing the new contribution at the end.

Chat sites are now widely available on the Web, even from the Yahoo! and Netscape portals. Some are quite respectable; most, however, are unmonitored, and not the sort of environment which is suitable for younger learners.

Dave Sperling's ESL Cafe now has a Chat Room which is policed, and which can be safely visited by students. A clever piece of software also substitutes any four-letter Anglo-Saxon expletive with the word 'love'... Communication of this sort is slow can be tedious, and

CMC

Computer Mediated Communication. The use of computers for communication between individuals or groups, often in a training or learning context.

bot

A robot or agent. Software which carries out a pre-programmed task or tasks in a semi-intelligent fashion.

links

Points in a Web page on screen which a computer user can click with the button of a mouse and be taken to another page or Internet site.

http://

When you key in http:// to a Web address, you're telling the computer to look for a hypertext file. http means HyperText Transport Protocol.

bitnet

A US education and research network, primarily providing email services. Bitnet is an acronym for Because It's Time Network. It has claimed to be the largest computer-based higher education network.

web

### AcmeWeb

<http://www.chat.acmeweb.com>  
Access to a variety of chat rooms via web pages.

web

### Virtual English Language Center

<http://www.comenius.com>  
The Comenius Group's Virtual English Language Center offers a good range of resources and services.

web

### RealLife

<http://www.owd.com/realife.html>  
Mail order company.

web

### Spectrum Virtual University

<http://horizons.org/campus>  
Virtual university now established on the Web.

web

### Assessment

<http://www.studint.net>  
The 'TOEFL Prep' page at Okanagan University College in British Columbia has 520 TOEFL-style multiple choice questions, with fully-commented feedback.

web

### IELTS (International English Language Testing System)

<http://www.ielts.org>  
Information about IELTS with downloadable samples.

web

### AltaVista

<http://altavista.digital.com>  
AltaVista, one of the Internet's most popular search engines, was introduced in December 1995, and receives over 5 million visits daily.

## Web-based tests & assessment?

The use of the Internet for testing raises many old as well as new issues. For example, how can you be sure who is actually taking the test?

Problems in administering Web-based exams have slowed development of Web-based exams for certification, but there is much activity in diagnostic and placement work, often allowing students to use tests for self-study and self-assessment. Such developments shift more control into the hands of learners.

Full Web-based testing would bring other changes to patterns of learning: for example, what would happen to the 'academic year' if students could choose to take an exam at any time?

# The virtual school

only just counts as real-time. Yet there is little doubt of the popularity of chat rooms and IRC with some students.

## Attending a virtual school?

A 'virtual school' might be defined as a 'cyber learning centre' which offers a full range of English language courses and levels, a diversity of activities, and a learning model which comes close to what is offered at the conventional language school.

There are clearly trends in this direction. The Comenius Group's Virtual English Language Center offers a good range of resources and services, but could not be said to constitute a 'virtual school' in a meaningful sense.

Many sites which appear to be courses or online activities turn out to be using their Web presence only as an advertisement: RealLife, for example, 'the worlds (sic) most innovative and unique English language learning product', is the Web site of a mail-order company offering four audio cassettes.

Those fully-fledged virtual universities and colleges who are now established on the Web often offer some sort of accreditation and are linked to 'normal' universities or Higher Education providers.

It seems only a matter of time before similar institutions appear for ELT; indeed, the first incarnations are probably visible at the Englishtown site.

However, at the present time, the

virtual school is still one that is very much in development.

## Testing via the Web

A good deal of testing practice material is carried on the Web, particularly for TOEIC and TOEFL. The chief change since 1996 has been that sites now permit far greater interactivity, and include a listening component (usually in RealPlayer format.) The 'TOEFL Prep' page at Okanagan University College in British Columbia, for example, has 520 TOEFL-style multiple choice questions, with fully-commented feedback, three hints for each and '4 different timers running to put some pressure on...' It requires Shockwave and JavaScript, and version 4 of Internet Explorer or Netscape.

Searching for English language tests gives a clear indication of the difference between the UK and US presence on the Web. A simple search for 'TOEFL' on AltaVista, one of the Web's best search engines, came up with over 76,000 pages which mentioned TOEFL. A search with the same engine for 'FCE' found only 11,000 matches, of which many were not really hits at all (the Foundation For Continuing Education, Future Computing Environments, and Fondo de Cultura Economica, for example.)

Both TOEFL and UCLES are taking seriously the business of Internet-based testing, but neither organisation has yet announced a product.

## What place women on the Web?

Many people have noticed the gender split on Usenet newsgroups, observing that the vast majority of people posting messages are men.

It has been informally estimated that less than ten percent of the public messages are written by women. This is much smaller than one would expect, given that an estimated 36 percent of Internet-accessing accounts belong to women.

Many women have allowed their voices to be drowned out, and both men and women have left the net entirely when they've become disgusted with flaming and other obnoxious behaviour. It seems that on the net you have to either 'put up or shut up' – is there truly no other option?

There might be. When working with children on a local network, I found that the girls did not avoid writing public messages. In fact, although there were only a few more girls in my project than there were boys, the girls wrote 58 percent of the messages. The girls who received negative responses did not back off, but held their own.

Why were these girls so different from their adult counterparts? Evard (1996)



Developed in 1994 at Stanford University, Yahoo! was the first search site on the Web to gain widespread popularity among computer users. Yahoo! invites callers to recommend sites and suggest where they should be placed in the directory. This hierarchical organisation of information differs from many other search sites which rely on spiders to locate information.

## What not to do: Flame & Spam

There are some activities which are more generally frowned upon, whichever discussion list you join. Flaming has come to mean a derogatory or angry comment, which is usually offensive or crude.

Flaming has in the past meant arguing in a passionate or eloquent manner, which, with its links to rhetoric and speech-making, may be considered on some lists as an art form.

To spam is to use a list as if it were a broadcast medium – for example, simply blasting out, blanket-coverage, an advertisement for a product or service, junk mail, or a notice for your own Web site or for a rival list.



Dave Sperling's ESL Cafe is probably the most visited ELT site on the Web. It acts as a portal, providing a range of services including a Chat Room which is policed. Software substitutes any four-letter Anglo-Saxon expletive with the word 'love'.

Access to the ESL cafe is straightforward: many sites such as Frizzy carry links to the ESL cafe to allow students to shuttle between the two.

TOEFL has developed a computer-delivered test structured in the same way as the old TOEFL – Listening Comprehension, Structure and Written Expression, Reading Comprehension – but its content differs significantly, and now includes a typed essay as well as questions exploiting the multimedia capacity of the PC. Some of the test is linear, but portions are now computer-adaptive.

The organisation which runs TOEFL, the Educational Testing Service, began computerised testing in July 1998 for examinees in the US, Canada, Latin America, Europe, the Middle East, Africa, Australia, and selected countries in Asia. It is anticipated that the current paper test will be completely replaced by the computerised version by the year 2001. As yet, however, no ETS tests are yet administered over the Internet.

The ELT Division at UCLES launched its own Web site in October 1998, from where all handbooks, sample papers etc can now be downloaded as PDF files from a single page. UCLES, like TOEFL, is likely to move in the direction of Internet testing at some point in the future, although no formal plans have yet been announced. As UCLES' Mike Milanovic points out:

**The next ten years are therefore likely to witness the emergence of a number of virtual ELT operations**

For popular examinations such as FCE, the practical problems of ensuring that enough machines are available for candidates, and the need to ensure that the candidate is in fact who he or she claims to be, mean that the electronic administration of examinations still lies some way in the future.

TOEIC has no online site at the time of writing, although one is scheduled to appear in the near future.

The issue of testing is clearly one that is set to change and develop. For those pursuing the area, there is a good range of sources of information about language testing and examination bodies available at the Web site at the University of Surrey.

### Is it all really any good?

Most ELT sites tend to be the product of individual enthusiasts. They are the work of teachers who, for the most laudable of motives, have put up pages of palindromes, or extracts from their students' work, or examples of mazes. They are often interesting to look at, but turn out to be unusable as a resource for students. These 'hobby' sites are sparse in content (though rich in links to other, equally sparse sites)

#### multi-media

A mix of text, graphics, images and sound. Multimedia is a growing area, with continuing development of interactive materials taking up ever larger amounts of storage space.

#### CD-ROM

A storage technology which can provide self-contained resources or be supplemented by the latest information downloaded and updated from the Web.

#### CALL

Computer Assisted Language Learning. Software which presents activities designed to help language learners. Many of the activities are based on conventional approaches such as cloze.

#### ISDN

Integrated Services Digital Network. ISDN lines can move data at higher speeds than standard modem connections. ISDN installations are needed at both receiving and sending points.

#### MT

Machine Translation. Despite widespread scepticism about the quality of the translations produced by computer, many translators use MT as a preliminary tool in their work.

### Remember CALL?

When Computer Assisted Language Learning (CALL) software arrived in the mid-1980s it was exciting – and seemed to offer a practical approach to learning both about a discipline and about computers at the same time.

However, a lot of the software remained stuck, revolving around activities such as cloze exercises, and facing criticisms that the programs were more interested in demonstrating technical feats rather than educational outcomes.

It may yet change – multimedia is opening new avenues and sites are now beginning to explore more exciting ways of using technology.

### Planet English from Australia

Planet English, a multimedia course from The University of New South Wales in Sydney, is an illuminating example of ELT on the Web. Teachers were key to the course design and learning goals were specified at the outcome; the course was designed to fit into other programs and so it profiles native and non-native speakers.

Although it's a powerful demonstration of CALL, it's unlikely such sites will replace face-to-face teaching; rather it suggests a need for training of teachers to accommodate, use, or build upon computer based resources. They will almost certainly be part of the future.



Frizzy University Network is designed especially for EFL and ESL students. Activities range from taking grammar workshops and scanning reference materials to following tutorials for creating home pages, finding keypals and taking part in MOO. Students can also sign up for individual tutors.

The site also contains links and references.



# Verdict: ELT via the Web

and infrequently updated once the initial enthusiasm has worn off.

There are some skills-based activities for students, complete with computer-generated feedback, but these are restricted in terms of level and topic, dubious in terms of content, and significantly less attractive in terms of presentation than much of the Computer Assisted Language Learning (CALL) software of the mid-1980s.

It is easy to become excited by the novelty of completing a computer-generated activity over the Web. But this excitement is similar to that generated by the first CALL programs: it is merely the appeal of novelty.

In the early days of CALL, it was widely believed that software such as Storyboard would automatically stimulate oral interaction and enhance language learning. Storyboard is probably the most widely-used CALL program, and exists in many different versions. The user is asked to restore a text in which all the words have been replaced by asterisks or blobs.

Experience has shown that Storyboard per se does little to get students talking (though it is useful for many other reasons). It is only when suitable texts are selected, and when the task is related to a classroom activity or a self-access 'pathway' that it becomes a worthwhile learning tool. The novelty of the Web means that this lesson is having to be re-learned. As Lloyd Halliday puts it:

Much of what is provided by the Internet is no different from what can be and is provided by stand-alone CALL programs. The only difference is the range of distribution. (Halliday, 1996)

A few ELT sites are worthwhile; but at the moment, they are few and far between, and the learner, whether in class or studying alone, would be better advised to concentrate on conventional ELT materials.

The poor quality of these sites is not difficult to account for. While it is easy for teachers to put up a few pages of text and links to other sites, creating anything complex is a much more challenging undertaking. A cursory examination of the obstacles might yield, for example, the following:

- Even with a small site, maintaining internal hyperlinks can be time-consuming, and maintaining accurate links to ever-changing sites elsewhere can be much worse.
- Integrating anything other than a simple photograph or line drawing can be technically challenging: a graphics image can be copied in with a low-cost scanner, but audio and video materials are more difficult to convert successfully to digital form. The 'digital document' is not impossible for the hobbyist – the work of Randall Jones on audio and video is a case in point – but is cer-

## Getting info: Ezines & Webzines

Online magazines – variously called ezines, e-zines or webzines – have been a feature of the Web since its inception. Magazines such as Hotwired regularly feature among the most frequently visited Web sites.

EFLWeb calls itself an 'online magazine for those teaching and learning English as a Foreign Language'. It contains some articles, but lacks the interactivity and 'pizazz' which characterise ezines elsewhere. Its listings of institutions offering English language courses in the UK, teacher resumes and conference information put it more appropriately in the category of reference.

IT's On-line is a Spain-based ezine for teachers and students, linked to a conventional magazine and other print-based materials.

The Reporter, an Italian ezine, offers a similar range of news, articles, links and information for teachers and students.

Other magazines on the Web are aimed at teachers, rather than students. The Internet TESL Journal appears monthly, and includes lesson plans and handouts as well as articles and research papers, while TESL-EJ is a quarterly journal of high academic quality.

Wild-e is a site devoted to professional development, with a penchant for pop and rock music and New Age philosophy. Written by EFL/ESL teachers, but aimed at a wider teaching audience, the site is witty and idiosyncratic.

Inspire!, the TEFL.Net monthly, is more a newsletter than an ezine: a single-idea email sent out monthly (and free) to subscribers.

Many other EFL magazines have not (yet) migrated to the Web. The majority have their own Web pages, which contain subscription information and sometimes (IATEFL, TESOL) selected articles from the current edition.

**web TOEFL**  
<http://www.toefl.org>  
TOEFL has developed a computer-delivered test exploiting the multimedia capacity of the PC.

**web UCLES ELT Division**  
<http://www.cambridge-efl.org.uk>  
The ELT Division at UCLES Web site was launched October 1998.

**web University of Surrey**  
<http://www.surrey.ac.uk/ELI/ltr.html>  
One of the best sources of information about language testing and examination bodies is the Resources in Language Testing Page at ELI, University of Surrey.

**web Sample assessments**  
<http://www.cambridge-efl.org.uk/support/downloads/index.htm>  
Handbooks, sample papers and so on can now be downloaded as PDF files from a single page.

**web TOEIC**  
<http://www.toeic.org>  
TOEIC has scheduled an online site.

**web Child-friendly Web**  
<http://www.netparents.org>  
Includes essays, contacts and information; with suggestions for child-friendly and educational sites.

tainly beyond the scope of the casual user.

- Simple matching, filling and similar routines are not available in HTML. The materials writer needs to exit the Web page through a CGI interface to invoke an external program; a process fraught with difficulties, and frowned on by the owners of many sites, who fear a breach of their network security.

- Quite simply, most teachers are not materials writers.

ELT materials of this sort abound on the Web, but most represent a triumph of form over content: a few reading texts are available, some sound and video clips, and a handful of interesting and innovative activities. At the time of writing, it is clear that a shelf of EFL workbooks and EFL coursebooks would offer far more in terms of exercises, activities and ideas than the whole of the World Wide Web.

More worthwhile sites are establishing themselves. A few Web sites (Dave Sperling's ESL Cafe, Steve Rudolph's Planet English, Volterre-FR) are the work of individuals but are nevertheless of such a quality and reliability

that they deserve a place in everyone's bookmarks. Others are the work of small, start up companies: EnglishClub, Stuff Media, TEFL.com, Wordskills.

It is too soon to say which sites will be of lasting value, and which will be here more than a year or two; but they are all second generation sites, marked by professionalism, consistency and a commercial awareness which is long overdue.

Larger sites, such as those of the publishers, have tended to be disappointing, though Longman and Oxford both offer regular Webzines, and Cambridge has been experimenting with some innovative online ideas to accompany its New Interchange business publications, including activities with Shockwave and RealPlayer.

In the longer term, it is probable that larger institutional and company sites will dominate. Only they will have the resources needed to generate interesting content and provide interactive services.

Larger sites planning to create resources and online courses are likely to be able to involve teachers from the outset who are able to bring ideas and experiences in classroom teaching, along with the practical uses of com-

**In the longer term, the larger institutional sites will dominate – only they will have the resources needed**

Encarta

Microsoft's multimedia encyclopedia product. The product suite includes atlases and reference sources.

CU-SeeMe

Software for video compression, which allows conferencing with up to eight different sites located anywhere in the world.

Hytelnet

A program that provides flexible connection to a variety of networked information resources, especially library catalogues.

Real-Audio

A program which allows you to listen to speech and music in real time over the Internet. Used for broadcasting as well as playing multimedia files on Web sites.

BBS

Bulletin Board System. Via the BBS a computer user can upload and download files and carry on discussions. Thousands of bulletin boards run worldwide both on small and large-scale computer systems.

### Is there a child-friendly Web?

Pornographic and violent images and language, sexist or racist representations, and the abuse of the Web by single-issue pressure groups never fail to grab the attention of the press – and to alarm teachers concerned for younger students.

Everything found in society can be found on the Web – which means it can be a dangerous place: teachers need to reinforce ideas about responsibility as much as how to use a dictionary.

There will be increasing pressure to provide 'safe environments' for learners, through the use of site ratings or proxy servers which prevent access to unauthorised sites.



Merlin is commercially available to HE and FE institutions, training providers, schools and colleges as a Web-based 'learning environment'. Merlin offers students, from a variety of disciplines, support with their learning through online work, teaching and collaboration. Originating as a joint research project between BT and the University of Hull, Merlin has since been developed by the University for modular learning. Merlin is described in more detail on page 33.

### Searching by AltaVista

AltaVista, developed by DEC, is one of the best-known search engines on the Web.

When using search engines there are particular tricks which help you to find information. In AltaVista, specifying many words and phrases to search for – and which must appear in the text you're looking for – is sometimes more useful than entering one word. Type in the prefix, plus (+), to each word entered for the search.

The system also offers advanced forms, for you to refine your search, for example by typing in 'Boolean' operators – words such as 'and', 'or', and 'near'.

# Anatomy of a site name

puter assisted learning; of curriculum and materials development; test design; administration and management. Drawing together teaching staff with multimedia designers, writers and technical specialists is of the scope that clearly only a larger institution can fund and support.

The Digital Education Network and the British Council will function as portals for different kinds of users, while the University of Hull's Merlin programme and EF's Englishtown point the way forward for sites providing realistic distance teaching and learning.

## Getting stuck with a site name?

When you type the address of a Web site into your browser, it helps to have a little knowledge of how the address is composed. If you fail to retrieve the page successfully, you may be able to work out where you or your software has gone wrong.

URLs (the Unique Resource Locators, explained on page 6) may seem long, meaningless sequences of characters, but they are made up from several parts, each of which plays a role at different stages of the retrieval process. Take, for example, an address such as: <http://www.iatefl.org/callsig/callsig.htm>

## So what does it all mean?

- 1 the first part – <http://> – shows the protocol needed to access this particular page or resource. Most Web pages will start with [http](http://) (or [https](https://): the secure variant of [http](http://) which is used for sending sensitive information such as credit card details). Other protocols which you may come across are [ftp](ftp://) (File Transfer Protocol); [gopher](gopher://), and [file](file://) (retrieval of a page held on your own hard disk or CD-ROM). This sequence always finishes with a colon and double backslash.
- 2 the next part – [www](http://www.) – is the name of the server at the remote site which contains the Web resources. The commonest name is 'www', but this is only a convention and is far from universal.
- 3 [iatefl.org](http://www.iatefl.org/) – indicates the registered owner of the site. There is very little to stop anyone registering such an address and many of the best names have already been taken. Although most national laws outlaw deliberate attempts to mislead, you should take care to check that a site is owned by the organisation you think.
- 4 [/callsig/callsig.htm](http://www.iatefl.org/callsig/callsig.htm) – the sequence which follows the backslash shows where the file is located on the local server. This part looks rather like the directory structure of your own hard disk, with each slash signifying a directory. Be careful: this part of the address may be 'case sensitive', so make sure you have copied any capital letters correctly. The first part of an address, like an email address, is never case sensitive.
- 5 [.htm](http://www.iatefl.org/callsig/callsig.htm) – the last part of a filename usually shows what kind of file it is. The commonest are [html](http://www.iatefl.org/callsig/callsig.html) or [htm](http://www.iatefl.org/callsig/callsig.htm) which stand for [html](http://www.iatefl.org/callsig/callsig.html) file (i.e. a normal Web page). But some resources may carry filetypes such as [zip](http://www.iatefl.org/callsig/callsig.zip) (for a compressed data file), [pdf](http://www.iatefl.org/callsig/callsig.pdf) (for an Adobe Acrobat Portable Document Format file), or [ram](http://www.iatefl.org/callsig/callsig.ram) (for a RealAudio file). Your browser will normally recognise these different kinds of file automatically and launch the appropriate plug-in to decompress, display or play the file.

## What else is there to look for?

The final part of a site name or email address shows either a two letter country code (e.g. [uk](http://www.uk) for Britain, [de](http://www.de) for Germany), or (under the US system which originally assumed all sites were in the US!), shows the type of server. 'org' is a non-profitmaking organisation; 'com' is a commercial site; 'edu' is an educational site. If the last element is one of these, you cannot easily tell where the server is based. If the address ends with a country code, then the rules governing name registration in that country apply. A site ending 'uk' must be British. One ending with 'to' (Tonga) can be anywhere. The site [gonow.to](http://gonow.to), for example, is operated by a US company.

**web** **Randall Jones**  
<http://www.esl-lab.com>

**web** **New Interchange**  
<http://www.cup.cam.ac.uk/elt/interchange>  
An example of the kind of online school Cambridge has been experimenting with some innovative online ideas.

**web** **Englishtown**  
<http://www.englishtown.com>  
An example of the kind of online school which is likely to become more common in the future.

**web** **Merlin**  
<http://www.hull.ac.uk/merlin>  
Merlin provides access to an electronic learning environment.

One of the reasons why the opportunities offered by the Internet are not fully exploited by teachers and their employers, is because Internet skills – even the basics such as being introduced to equipment, or how to find what you want – rarely form part of training.

Any use of the Internet for teaching and learning requires an understanding of how it works, and confidence in exploring what it has to offer. This section pays special attention to perhaps the most basic skill: how to find out what is available.

## Searching the Web

A perennial problem for people using the Web is that of finding appropriate information in the morass of material available.

The Web is not a library, but a collection of libraries, filing cabinets, cardboard boxes and rubbish bins scattered all over the world. Some directories exist: Yahoo! for example, was the first service to attempt to sort material into meaningful categories, but these services collect together only a small fraction of the material available. Furthermore, they are often out of date, since they rely on sites 'submitting' their information and on human beings to categorise them.

Since 1997 major sites have reinvented themselves as portals for information services

A more proactive approach is to use special software, variously called 'robots', 'bots', 'agents' or 'spiders', to actively seek out and automatically index the contents of Web sites. These search engines have proliferated in the last three years.

The Virtual Search Engines site now lists more than a thousand specialised search engines organised into 50 categories. Search.com has an alphabetical list of over 400 speciality searches, while Search Engine Watch is nearly as comprehensive. Some sites charge, or give sample data only, but the majority are fully functional and free.

## 'Push' technology

Search engines are becoming more and more sophisticated and specialised; but the average user has neither the time nor the inclination to use a search engine or specialised directory every time he or she wishes to find a piece of information.

A widely touted solution to this problem in 1996-97 was the use of 'push' technology.

Users would register on specific content channels, such as Time or Disney, according to their tastes and interests, rather in the way that a cable subscriber would opt for certain TV

portal

A gateway to the Web. Portal sites are developing as service centres for the Web: competition is growing between ISPs to provide services at portal sites.

gateway

This has come to mean any point of entry to another system. It is also a hardware or software setup which allows data to move between two protocols.

push

Technology which delivers data to a user's computer at particular times. The opposite of push technology is, not surprisingly, pull technology: data is delivered to a computer user only when they ask for it, by visiting a Web site, for example.

wizard

A small computer program which guides a user through a complex procedure, such as setting up an internet connection or even the design of a basic home page on the Web.

keyword

Words you might use to locate resources on the Web. Searching is a difficult task: the databases contain the full text of the materials you may be looking for and may not, perversely, be located easily via a keyword. One of the skills to learn is selecting the most likely keywords.

## The trend to portals

The following ranking, of most visited Web sites from Media Matrix (visitors in October 1998) shows the trend for people to use portals as a point of entry to the Web. Ten of those listed opposite are portals such as AltaVista, Geocities, Infoseek and Yahoo!

Portals offer a variety of services and entertainment, which not only increases the number of visitors to the site, it also helps keep visitors there for longer, allowing the portals to claim an increased commission on ecommerce transactions and to increase advertising rates.

1	Yahoo.com	29,344
2	AOL.com	28,256
3	Microsoft.com	22,004
4	Netscape.com	20,875
5	Geocities.com	19,244
6	Excite.com	15,858
7	Lycos.com	14,110
8	Infoseek.com	12,593
9	MSN.com	12,255
10	AltaVista.com	11,268
11	Tripod.com	10,080
12	Angelfire.com	9,474
13	Hotmail.com	9,018
14	Bluemountain-arts.com	8,175
15	Xoom.com	8,145

(Visitor numbers in thousands)

## What's a Spider?

Spiders reside on a single computer and search Web sites for information, then log and index the contents of each document they find.

Being automatic, these programs can do a good deal of damage, moving so swiftly through the pages of a site that they can cause the server to crash or tie it up to such an extent that no-one else can use it. But they can also catalogue information at a rate unachievable by any human agent.

The first Web spider, also called 'bots', Webcrawler, was created in 1993. Lycos (based on the name of a hunting spider) was developed soon after.

channels. Instead of the user then having to visit sites and 'pull in' the information required, the remote computer would 'push' content to the user's computer. Video and audio would then be available much more readily: complete files and pages could be pushed to the computer, ready for almost instant use when required.

Push technology turned out not to be the great success predicted, chiefly because the vast majority of users are not permanently linked to the Internet, ready to receive regular updates. People may visit only once or twice a day, and then for short periods of time: nothing like enough to update the channels to which they had subscribed.

Yet push technology probably has a future on the Internet in the longer term and may move away from the place it occupies as present – where it is used primarily on corporate intranets.

## The new portals

The need for a solution to the search problem remained and the approach adopted by major sites since late 1997 has been to re-invent themselves as 'portals', or gateways to the information services and resources of the Web.

A typical portal (the new Yahoo! is a good example) will offer a set of categories in the style of the 'old-fashioned' directory services, such as one or more search engines; news, weather and lifestyle services selected by the user; advertisements tailored to

the user's interests; free email and space for Web pages; the ability to customise the appearance and layout of the portal page; and possibly the ability to store the user's bookmarks or favourites (shortcuts to frequently visited sites) on the portal page, as well as on the user's machine, so that they are accessible from wherever in the world the user happens to login.

Portals have, so far, proved immensely popular. Users appear to like connecting to a site which they can personalise, to a certain extent, which provides them with the news and views that they have declared themselves interested in, and which gives them access to sources of information of reasonable quality and currency. It is interesting that in Media Matrix's October 1998 listing of the most-visited sites on the Web, all but five of the 15 are portals.

Portals are attractive to advertisers and commercial partners. But being a portal also means, by definition, that people pass through on their way to somewhere else. Thus, the search engines and directories and other portal 'wannabes' are increasingly trying to create content on their own sites, or else to develop communities or some other reason to detain visitors.

The attractions to businesses of portal sites may be indicated by the fact that Lycos spent \$58 million in January 1998 for Tripod, a site originally set up for \$300,000!

## What are portals?

A Portal is an Internet site which presents itself as the 'entrance' or the 'gateway' to the World Wide Web. Portals offer a combination of services beyond their role as an entrance point – such as travel information, stock prices, weather information, sports results, news updates, and guides to other services, such as online shopping.

One of the main differences between a portal and other ways into the Web is that you can customise a portal according to particular interests. If you want access to news, for example, rather than sports, you can set this service to run on the site whenever you visit.

The development into portal services has come about partly as a pressure to organise the vast amount of information available, and partly to cohere the markets – a necessary step for ecommerce development. Audiences are defining their own interests: sites such as Yahoo! can thus present related advertising aimed at these potential customers, explore new deals of sponsorship, and claim a bigger commission on ecommerce transactions, having played a more active role in matching customers to sales.

In the past year there were several business deals which demonstrated the trend to create points of flow where customers, advertisers and ecommerce companies could converge.

Amazon, the online bookstore, has struck deals with many of the big portal sites so that its services are featured prominently; in early 1998 Lycos paid \$58 million for Tripod, an Internet community site, and Yahoo! paid \$5 million in a partnership deal with GeoCities. Netscape has re-invented itself as an ecommerce company with a portal, and Microsoft has set out its goal to develop its MSN as the biggest portal on the Web.



### Yahoo!

<http://www.yahoo.com>

The first service to attempt to sort Web material into meaningful categories.



### Virtual Search Engines

<http://www.dreamscape.com/frankvad/search.html>

The Virtual Search Engines site lists more than a thousand specialised search engines organised into 50 categories.



### Media Matrix

<http://www.mediamatrix.com>

In the October 1998 listing of the most-visited sites on the Web, all but five of the 15 are portals.



### ELT portal

<http://www.englishlearner.com>



### Speciality search

<http://www.search.com/Alpha/1,6,0,0200.htm>

Search.com has an alphabetical list of over 400 speciality searches.



### Search Engine Watch

<http://www.searchenginewatch.com/facts/specialty.html>

Listings for speciality searches.



### ELT portal

<http://www.englishclub.net>

Another, more recent portal site for ELT.



### The skills teachers need...

Conventional CALL was difficult enough for many teachers. The Web, for all its advantages, can be even more harrowing. What do you do when the site around which you had planned your session suddenly disappears? How can you keep your students learning when the whole Internet slows to a crawl? How can you keep control during an IRC session? And what is the best way of handling a student who covertly calls up the Playboy site?

Teachers already face a host of worries about pedagogy and methodology and may be disinclined to take on the learning of a whole new area. However, Internet facilities and the World Wide Web will be used increasingly in schools; fluency or experience with using it may be requested from employers, and, not least, there is a great deal going on in cyberspace which will be important for students – many will simply expect an element of their learning will be with computers.

Here is a brief outline of some of the the practical skills that teachers will need. This list is by no means exhaustive and does not cover the issues which are subjects to learn about – and to teach – in themselves, such as the

evidence of language change on the Internet, and the special features of Computer Mediated Communication.

*Communicating* Teachers need to learn new languages; to communicate on the Internet; to become familiar with the genres of email and discussion lists; live chat; form-filling, subscriptions and registrations; to know how to query and complain; how to find answers and confidently engage with people who are actively involved in the Internet, either face-to-face or through the keyboard.

**Teachers need to learn new languages: to communicate in the forms that now exist across the Web**

*Searching* Teachers need to be able to use at least a couple of search engines well; to learn when search engines are appropriate and when they are not (in general, engines are the last thing to use, not the first!); to understand how to use Boolean searches; and to know where specific types of material are located (eg photo services).

*Evaluating* Having found pages, teachers need to be able to form a judgement as to how good the material is: how accurate, how current, how deep, how navigable and how relevant to the learning task. The fact that material is on the Web doesn't make it better.

adapter

A device – often a simple circuit – which allows one system to connect to another.

dpi

Dots per inch. The measurement for print resolution. A printer with 300 dpi will create low resolution output; a printer with 1200 dpi will have sufficient definition to print photographic images.

RAM

Random Access Memory; the computer's memory, or working space. Random means the contents of each byte can be accessed directly; they do not need to be accessed in sequence.

string

A sequence of characters held in computer memory, for example, an error message.

ascii art

Creating images using ascii characters such as / \ o } =. People often use ascii art in the signature lines at the end of email messages.

### Today's lesson...

- Initiate a keypal project by joining a mailing list, doing an Internet search, or finding a teacher in another part of the world looking to establish a similar project.
- Create a school email project; invite parents, local institutions and community bodies to take part.
- Create class or individual homepages.
- Email for 'expert opinions'.
- Take a virtual tour through a country of choice and report back on sites and adventures.
- Create a check list to make a critical evaluation of a selected site.

- Carry out research into topic and theme-based ideas – from dinosaurs to tourism in Alaska.
- Post to discussion lists and newsgroups.
- Lead students on how to search using search engines; print out information in hard copy, transparency, save pages as text or HTML.
- Run classes on net English.
- Experiment with different search engines and compare the results.
- Create resources for Web publishing.
- Lead a lesson on copyright and citing Internet resources.
- Try videoconferencing.

- Visit online museums, libraries.
- Chase words through a selection of dictionaries.
- Join a MOO or a MUD.
- Host a technology night to show off the school's skills to visitors.
- Create a school ezine
- Invite experienced computer users to write instruction cards for non-experienced users.
- Create a forum to debate issues such as gender on the Web.
- Review other school sites.
- Publish best sites on noticeboards and common room areas.

# What skills do you need?

**Manipulating and creating.** Teachers need to have sufficient control over the technology to cut and paste text from a Web page into a worksheet, to insert and resize graphics. The skills of assembling, manipulation and transformation may be more important in the future than those required to generate original materials.

**Integrating** Above all, teachers need to be able to integrate Web activities with the rest of their teaching; they need to be able to plan how to organise a Web session in terms of classroom management and their methodology, and be able to assess and review its strengths – and shortcomings – for learning, student progress, and effective teaching. (See also, Eastment et al., forthcoming.)

## Evaluating English language Web sites

No-one has yet fully addressed the need for Internet skills to form part of teacher training, although a number of universities are beginning to include Internet work into their courses with student teachers. The case study below describes a project carried out jointly by David Prescott, at the University of Brunei Darussalam and Sim Prescott at Curtin University of Technology, Australia. The course demonstrates how the Internet can be integrated into the delivery of courses, as well as used to develop skills a teacher needs to evaluate ELT Web sites.

'In 1998 the authors taught CALL courses to student teachers at their respective institutions using a pedagogic paradigm of remote expert, resident tutorial group, and resident backup facilitator in order to pool their resources, and their expertise. Materials were exchanged using file transfer protocol (CuteFTP) software and lectures were delivered on-line using Microsoft (MS) NetMeeting. This application (packaged with Windows 98 or available as a free download from [www.microsoft.com](http://www.microsoft.com)) permits groups of users to conduct virtual tutorials, using text, voice and video.

One lecturer took primary responsibility for assessment and evaluation of Web sites and the other took primary responsibility for the educational and learning theories that were used to underpin the assessment and evaluation activities and provide the theoretical background.

This assessment and evaluation was done in the context of work by Levy (1997) and Jones and Mercer (1993) so that the teachers considered all material within the frameworks of relevant theories of learning: behaviourism as well as constructivism and socio-cultural theory derived from the work of Vygotsky (1978).

An assessment and evaluation format was developed in order to appraise English language Web sites. This format enabled sites to be rated on a 1–5 scale in the following categories: methodology, design features, type of instruction, audio visual features, graphics, navigation, activities, relevance to local context.

Commentary on the ratings was a feature of each category. The eventual categories were the result of trial and discussion work between the students as a result of visiting a range of EL sites. Further development work of this format will be a feature of subsequent courses.'

The evaluation and assessment format may be viewed at:  
<http://cie.curtin.edu.au/users/sim/eval>

## How do you find updated info?

News and views about the Internet change all too quickly. New technologies, new applications, new software, new hardware, new deals, new market predictions... all play a part in keeping the industry a vibrant and exciting area – but one in which change is a complex and at times alarming process.

Magazines – monthlies and weeklies – are one of the best sources of regularly updated information. Industry news, informed opinion, editorial observations and reviews will help you keep up to date with the area you're exploring. Many also carry product supply details.

Try the magazines listed in the next panel.

**Byte:** One Phoenix Mill Lane,  
Peterborough NH 03458

**Internet:** Emap, Audit House, Field End  
Road, Eastcote, Ruislip, Middlesex HA4  
9LT

**Internet World:** Mecklermedia Corp, 20  
Ketchum Street, Westport, CT 06880.

**NetUser:** Paragon Publishing, St Peter's  
Road, Bournemouth BH1 2JS

**.net Directory:** Future Publishing Ltd, 30  
Monmouth St., Bath, Avon BA1 2BW

**Wired:** Monthly Internet magazine.  
Heavily style conscious, low on technical  
information, high on 'intellectual'  
content. Tower House, Sovereign Park,  
Leics LE16 9EF (ISSN 1357-0978)

**web Internet TESL Journal**  
<http://www.aitech.ac.jp/~iteslj>  
The Internet TESL Journal appears monthly,  
and includes lesson plans and handouts as  
well as articles and research papers.

**web TESL-EJ quarterly journal**  
<http://www.kyoto-su.ac.jp/information/tesl-ej/index.html>  
A quarterly refereed journal of high academic quality.

**web Professional development**  
<http://www.wild-e.org>  
TESL-Wild-e is devoted to professional  
development, with a penchant for pop and  
rock music and New Age philosophy.  
Written by EFL/ESL teachers, but aimed at  
a wider teaching audience, the site is witty  
and idiosyncratic.

Although the origins of the Web lie in academia, its present and future belong to the world of business. This section examines some of the commercial aspects of the Web.

### Commerce on the Web

Electronic commerce, or 'ecommerce', as it is now commonly termed, began in the early 1990s through online services such as Compuserve. Since 1997, ecommerce has started to grow rapidly. Its attractions are obvious: the facility that multimedia offers to vendors who can portray goods and services attractively and interactively; low-cost set up (and in the case of some goods, such as software, low-cost distribution); the ability to create close and on-going relationships with customers; and (perhaps as might be expected), 'disintermediation', the cutting out of the intermediaries allowing direct contact between the producer and the customer.

Initially, ecommerce was bedevilled by the lack of a secure payment mechanism. This problem has now been solved and commercial transactions over the Internet have burgeoned.

Nevertheless, few sites are yet turning in consistent profits. According to a recent report by German Internet

service provider CVSI, at least 20 per cent of a population needs to have access to the Internet before a company can make a profit online. The US is expected to reach this point in 2000, while Europe will have to wait several years, says CVSI.

Projections vary considerably as to the value of ecommerce, but all indicate significant growth in the near future. According to an October 1998 report by Emarketer, revenues from ecommerce in the US are set to increase a massive 732% over the next four years.

Similar levels of growth are expected, albeit later, in the UK and the European Union. It is interesting to note that the current UK government has announced its intention of appointing a 'digital envoy' with the role of promoting ecommerce in the British economy.

### Marketing opportunities

The Web has obvious attractions for marketing, and particularly for marketing internationally. An overseas mail-shot is expensive, and its effectiveness often difficult to measure. A Web site, however, represents a low-cost showcase for an organisation, accessible to any potential student with a computer and a modem.

**The critical factor for a Web site to be successful seems to be the extent to which the site is promoted**

TCO

Total Cost of Ownership. Calculating the cost of installation and potential expansion of any system is a complex business; the rapid decline in consumer PC prices may also not necessarily be reflected in cost to corporations and businesses who need customised software and specialised support services.

ethernet

A common means of linking computers in a network. Ethernet handles around 10,000,000 bits per second. So-called 'fast ethernet' operates at ten times this speed.

WAIS

Wide Area Information Server. A commercial software package that allows the indexing of huge quantities of information, which are then searchable across the Internet.

URL

The Unique Resource Locator is the address of a Web page, and, like a telephone number, is unique. Businesses do have some freedom in choosing a URL, although many best names are now allocated.

port

Generally used to indicate the point at which information goes in or out from a computer, for example the port on the computer where a modem is connected. Otherwise a port is part of an URL: usually a number which follows a domain name and separated from the domain name by a colon.

### Buyer names the price

Ecommerce is likely to become one of the main areas of economic activity in the future – and companies are now experimenting with new ways of buying and selling on the Web. Priceline.com, supported by an aggressive marketing campaign, allows customers to name their own best price, which is then thrown open to dealers to accept or decline. If a dealer accepts, the customer receives confirmation by email. Priceline's system is offered on airline flights, hotel rooms, deals on new cars and home financing. The company also offers encryption for payment for goods by credit card. Such arrangements overturn traditional relationships between buyer and seller.

### US revenue from ecommerce

Estimates vary, but according to some research figures the US market for online shopping revenues will reach \$37.5 billion by 2002. Shopping revenues for books, air travel, music and software in Germany, France and the UK will reach \$3.3 billion by 2002; the equivalent revenue in 1997 was \$68 million.

The following figures from Emarketer show the expected rapid annual increase in online revenues:

1998—\$4.5 billion  
1999—\$7.7 billion  
2000—\$14.8 billion  
2001—\$22 billion  
2002—\$35.3 billion

### TESL, TEFL, EFL, ESL ...

Businesses have had some flexibility in choosing best sites, although many are now allocated. A sample search shows several names are taken by ELT organisations containing these letter sequences: Tefl.co.uk – taken by Bournemouth English Book Centre; Tesl.net and Tesl.org – reserved; Tesol.com – taken by Planet English, currently for sale; Tesol.net and Tesol.org – taken by The Linguistic Funland; Tesol.edu TESOL Online – taken by TESOL International; Tefl.com – taken by TEFL Professional Network, a private company.



# Doing business

The Internet can offer far more than an electronic shop window, however. Visitors can be attracted by language games and activities, or offered the chance to test their English; they can be asked to register their name and email information, so that a targeted database can be developed; they can be asked to register for emailed newsletter or information updates, so that ongoing customer relationships can be developed – the list is a lengthy one.

The ELT sites run by language schools and colleges in the mid-90s tended to compare unfavourably with other commercial sites on the Web. Often, they offered little more than an online, electronic brochure, with funding directed at design and corporate 'feel', rather than the equally important issue of making the content interesting enough for users to want to visit more than once. (This is not surprising: setting up a few pages is relatively cheap, whereas providing good content is expensive.)

Moreover, a successful Web site is about more than the pages themselves. The critical factor for success seems to be the extent to which the site is promoted, whether conventionally (such as in brochures, headed notepaper, press releases and so on), via the Internet itself, in newsgroups, lists, and through links to other sites, or by submission to the many search engines and directory services.

During 1997 and 1998, the quality of

school and institutional sites has improved significantly, partly because of increasingly sophisticated 'Web masters', and partly because of a growing realisation of the importance of the medium.

The Web site of the Bell Language Schools, for example, now includes word games, proverbs and a chat facility to attract visitors for a return visit. Pilgrims has a 'Talking Points' page for current and former students to keep in touch; the 'Aardvark' section at the ILC site has a broad range of links which can be updated by students.

Scepticism about the value of a presence on the Web now seems to be the exception rather than the rule. Indeed, it seems that the ELT community is taking the Web increasingly seriously. The three and four letter acronyms, such as TESL, TEFL, EFL and ESL, are attractive on the Web, particularly to computer companies, but in fact most of the domain names of this type are either in use by ELT organisations or have been reserved by them.

Many ELT sites are gradually becoming more commercial in flavour. The more popular sites (Dave's ESL Cafe, Digital Education Network) started to carry banner advertisements in 1997. Some widely-visited sites resolutely resist this approach, however: the popular Internet TESL Journal boldly announces that its site is: 'Optimised for Speed: No Advertising, No Images, No Tables, No Javascript, No Frames,

## Buying or selling on the Web?

'Commerce on the Net will reach a milestone soon with online shopping revenues touching \$10 billion as the number of individuals making those purchases doubles annually. Consumer fears about credit-card fraud and privacy are giving way to a much greater need – convenience.' (The Economist, The World in 1999 p.120)

Online shopping – ecommerce – is becoming big business: companies are working hard for its success, now designing easy-to-use Web sites for consumers, investing in software designed specifically for retail online, developing the training and experience of sales and marketing teams, and, more recently, making available safer means of credit card transactions.

Ecommerce will be supported too by currency agreements such as the euro, pricing convergence across regional trade zones and the movement of other administrative and routine payments to electronic systems, offering consumers the means of payment via the Web. People will simply become more confident about shopping on the Web, with major players offering a pleasant buying experience oriented to the customer.

As for those now creating a Web site for business, several criteria are rated as most important by users, but one of the most important is navigation. The site should match a customer's expectations and intuitions. Good navigation means essentially a speedy and unproblematic entrance to the site – so no demands that only particular browser versions are supported – then the ability to move quickly and smoothly, reviewing and selecting options without too many mouse clicks or keystrokes: a move to contacts or inquiries, and then on to purchase, support, or further information.

**web** **CVSI**  
<http://www.news.com/News/Item/0,4,28574,00.htm>  
A recent report by German Internet service provider CVSI finds that at least 20 per cent of a population needs to have access to the Internet before a company can make a profit online.

**web** **emarketeer**  
<http://www.Emarketer.com>  
According to an October 1998 report by Emarketer, revenues from ecommerce in the US are set to increase by a massive 732% over the next four years.

**web** **TESL Journal**  
<http://www.aitech.ac.jp/~itesj/links>

**web** **Department of Trade and Industry**  
<http://www.dti.gov.uk/public/frame8.html>  
Information Society initiative: Programme for Business.

**web** **Bell Language Schools**  
<http://www.bell-schools.ac.uk>  
The Web site now includes word games, proverbs and a chat facility.

**web** **Pilgrims**  
<http://www.pilgrims.co.uk/talk/index.htm>  
A 'Talking Points' page for current and former students.

**web** **ILC**  
<http://www.ilcgroup.com/aardvark>  
The 'Aardvark' section at the ILC site has a broad range of links which can be updated by students.

Minimal HTML, No Nonsense.'

The greatest change since 1996, however, has been not the fact that ELT sites are better designed, or more interesting in terms of content, or that they carry more advertising, but that they are now being used for online registration and commercial transactions.

### Secure Electronic Transaction

In February 1996, Visa International and MasterCard (who had previously been pursuing separate development paths) announced a single technical standard for safeguarding payment card purchases made over the Internet. SET (Secure Electronic Transaction) verifies that it is the actual cardholder who is making the purchase therefore provides the long-awaited security needed for ecommerce.

SET is now well established and in widespread use on the Internet. Most browsers indicate its presence with a symbol: a broken key coming together, for example, or a padlock moving shut.

In parallel with the creation of SET, the two major browsers (Netscape and Internet Explorer) have developed mechanisms to enhance security. It is increasingly common to come across

addresses which begin with https:// (rather than simply http://), indicating that a secure server is being used to encrypt information.

Secure servers mean that you can connect to a site knowing that it is the real thing, and not a 15-year old hacker. Modern versions of the browsers support digital certificates, which companies can obtain from 'trusted third parties' such as Thawte.

When you connect to a secure web server, you ask that server to authenticate itself: a complex process involving public keys, private keys and a digital certificate.

The certificate tells you that an independent third party has agreed that the server belongs to the company it claims to belong to.

As of 1998, it seems that credit card transactions can be safely made by any Internet user.

**Digital Cash** Not all potential customers are credit card holders. An interesting development since 1995 has been that of Digital Cash, or 'CyberBucks': cash which is purchased from a normal bank, but can then be freely used in commercial net transactions.

Digital cash services – which appeal not only to individuals without credit cards but also to those who wish to

**New services are coming online every month – learners now have access to a rich environment**

### Digital money

There are several forms of electronic payment schemes now emerging. Using ecash from Digicash is like buying travellers' cheques: digital money is downloaded to a user from a participating bank for the customer to then use for purchases.

Alternately, credit card transactions can now be made securely across the Internet.

Undoubtedly, companies will continue to explore this area. If a safe and efficient payment system which allows public confidence in online shopping to develop, the market will expand very rapidly.

### Internet scams

Subscribing to a magazine that's never delivered; buying hardware or software which never arrives; becoming involved in sales activities which pay nothing; taking on 'starter kits' at huge costs for a scheme which simply doesn't exist...

Cons, frauds and scams have been as lively on the Internet as in any market system. However, there are hopes for customers and businesses who are wary of becoming involved in Internet trade.

SET could help eliminate scams since it requires the use of digital certificates to verify seller and buyer: and proof of identity is required in order to receive any digital certificate.

SET

Secure Electronic Transaction. A standard protocol developed to secure payments by credit-cards over the Internet. Payment details are encrypted as they pass electronically between customer, sales agent and bank.

FTP

File Transfer Protocol, or the means commonly used to transfer files across the Internet. Anonymous FTP means a computer user can access files across the Internet without needing to login with special identification.

hand-shake

When digital signals are passed to and fro, for example, between two modems over a network to check that all lines are open and data can be transmitted.

Web-master

The person responsible for implementing and maintaining a Web site. The word Webmistress does not seem to be commonly used.

spool

Data which is buffered, for example, to a printer. Spooling is often used for slow operations.



Mondex is an electronic system which combines smartcards with cash: the system is easy to understand – any transaction can be handled with just one card which shows membership, carries cash, shows your identity and so on. In 1997, Mondex and AT&T launched a system by which 'micro payments' – the equivalent of pocket-money purchases – could be made via the Internet. One of the developments key to the digital cash economy is the need for common industry standards and protocols.

# Is the future ecash?

preserve their privacy – have been beset by problems, however. Digicash, which owns patents on a range of cyber cash technologies (including eCash) entered into a 'Chapter 11 reorganisation' in mid-1998. Two other major players, CyberCash and FirstVirtual Bank both lost heavily in 1996 and 1997. First Virtual ceased trading in July 1998, recommending that its customers transfer to CyberCash.

It seems clear that Digital Cash (both on the Internet and in smart card format, such as Mondex) will establish itself as a long-term alternative to the credit card, but in the short to medium term, it is unlikely to have an impact on most consumers.

## New services

One example of the new style of services which can be traded via the Internet is provided by the Merlin project, based at the Language Centre, University of Hull.

Merlin aims to meet the needs of independent distance learners for flexibility, while at the same time providing high-quality materials and professional support. Learners have access to a rich electronic environment including computer-based study materials, computer-conferencing, a graphical workspace, a personal tutor, together with a coursebook, video and audio materials for use when not on-line. When logged in, participants are also

able to interact with other members of the course on an individual or group basis, submit assignments to and get advice and support from a tutor, and have access to online dictionary and other reference materials. Initially aimed at students on campus, Merlin was launched commercially in 1997, and now now offers courses in English for Business and English for Communication Skills over the Internet. Course fees are \$995 for a 14-week course.

International House, one of the best known ELT organizations in the world, has also just announced its Net Languages Internet Courses, with three levels from lower intermediate up, and other levels and courses in development. Each level consists of around 120 to 150 hours study, and costs 356 euros (approx. US\$ 400).

Other examples of emerging services include the following:

David Winet's English for Internet offers free English language classes in Grammar, Reading and Writing, Listening and Speaking, and special classes for TOEFL and ESP.

StudyCom is a teaching project of the University of Berkely and aims 'to explore and expand the educational potential of Internet by offering free online instruction by volunteer teachers to students from all over the world.'

## A provider's view

The success of e-commerce in the EFL world? Well, there is a modest amount of revenue generated at wordskills.com. It covers operating costs and produces some profit which is ploughed back into enriching the site.

The trend for online shopping for EFL/ESL training and resource materials, which was still in its infancy when the Training Resources Store opened on First Virtual four years ago, has still some way to go – but it is past the infant stage.

There are people out there who are prepared pay for the convenience of packaged (and tailor-made) resources, and the delivery of courses, for many reasons.

Competing technologies supporting methods of e-commerce will, I believe, narrow down to fewer realistic options that are credit card based (witness the demise of the First Virtual, and the decline in popularity of e-cash). Nevertheless the markets for ELT providers will undoubtedly grow as more non-native speakers of English come on-stream seeking cost-effective solutions to their language requirements. Wordskills.com will, I hope, help to provide those benefits in the years to come.

David Paul, Wordskills

## Smartcards

Smartcards are credit cards into which a microprocessor and memory is built in to handle both identification and transaction. Smartcards show the kind of flexibility which is sought from technology by business.

The market for smartcards has grown throughout the 1990s: European markets are forecast to grow at a rate of 22%, according to UK-based Datamonitor; up from 482 million units issued in 1995 to 1.6 billion in 2001. Worldwide, annual growth rates are expected to average 31% over the same period. The US is a large market, but significant expansion lies ahead in Asia and Europe.



### Thawte

<https://www.thawte.com>

Example of a 'trusted third party'.



### Links to ecash facilities

<http://ganges.cs.tcd.ie/mepeirce/Project/oninternet.html>

For a comprehensive set of links to well over 30 ecash facilities.



### Free English language classes

<http://www.study.com>

David Winet's English for Internet offers free English language classes in Grammar, Reading and Writing, Listening and Speaking.



### Digicash

<http://www.digicash.com>

Digicash owns patents on a range of cyber cash technologies (including eCash).



### Cybercash

<http://www.cybercash.com>

A major player in digital cash services.



### Services to teachers

<http://www.tefl.net>

TEFL.net provides a range of services to teachers, including handouts.

TEFL.net provides a range of (mostly free) services to teachers, including classroom handouts (about 30) for printing and photocopying, and a monthly emailed ezine.

Some of these will succeed; others will fall by the wayside. It seems likely that the successful sites will be those that do more than merely offer an electronic version, however slick, of their existing services.

### Charging for services

The majority of Internet services for ELT are currently available at no charge. There are a growing number of exceptions as ecommerce begins to take root. CoBuild began the trend, offering access to its 50 million word database for an annual fee.

At the other end of the spectrum, Adam Rado's English Learning Funsite teaches 'Grammar, Idiom, Vocabulary, Slang, Pronunciation, Accent Reduction & Listening Comprehension Activities'. \$5 per month, payable by cheque or credit card, gets you a password. Merlin and EdUSA, as noted above, are starting to charge for serious, structured courses.

The development of SET is already leading to an increased use of credit cards on the Internet; the development

of digital cash, as noted above, is likely to take considerably longer. In the immediate future, charging over the Internet is likely to take the following forms:

- 1 Pre-payment (whether by SET or conventional means) will be required for established services, such as enrolment on courses, subscriptions to paper journals and newsletters, book ordering, subscriptions to email discussion lists such as the British Council's MIS-L for ELT marketing information, and so on. Small companies are normally unwilling or unable to set up a merchant account with Visa or Mastercard; but several agencies now exist which will act as intermediaries and validate credit card transactions on their clients' behalf. Englishclub.net, for example, charges \$4.95 for 30-day access to its Business English materials: the actual transaction is handled on Englishclub's behalf by IBill.

- 2 Similarly, the English Book Centre, Oxford, accepts payment by credit card over the Internet; the transaction itself is handled by Netbanx.

**The development of SET is leading to an increased use of credit cards for payment on the Internet**

#### Unicode

A coding system which allows many different writing systems to be represented in text on Web pages and in email. Unlike traditional ascii code, which establishes a standard for only 127 characters, Unicode uses two bytes to represent each character, and thus provides for many thousands letter shapes.

#### user

A word widely used to mean a person who uses a computer: the word is difficult to escape in computer terminology, although many writers and editors attempt to do so.

#### IP

Internet protocol. Every Web server on the Internet requires its own unique IP number which is mapped to a particular domain name. Without a number, packets of data would never find their way across the world to the right machine.

#### dynamic IP

Home-based users do not have a fixed IP number assigned to their accounts: there are not enough numbers to go around. Instead, the next free number in a block of numbers held by an ISP is assigned to them when they connect, and the number is recycled when they disconnect.

#### UU encode

A method of encoding binary files by converting them to ascii text characters so they can be transmitted by email.

### Trust

One of key issues in Internet communication, preventing its wider acceptance in business, educational and private transactions, is lack of trust.

The technical infrastructure of the Internet, for example, causes problems in authentication. Who exactly are you talking to? Are they where they claim to be? The culture of the Internet, with its propensity for aliases and guises, does not help. And cross-border transactions raise many potential legal problems, such as consumer rights and contract law. This is why concepts such as 'trusted third party' will be of growing importance.

### TCO: Total Cost of Ownership

Computing equipment seems always to be falling in price, and gaining in power. But the cost of acquiring hardware is not necessarily the major cost to be considered: as the fact that there are now companies experimenting with giving computers away free of charge indicates all too clearly. 'TCO' is difficult to calculate but it must take into account how many extras (such as peripheral equipment) are needed, the cost of support, the likely cost of maintenance and repairs or insurance, how quickly it all might become obsolete, the cost of the necessary software, and not least, the time in training or learning how a new system works.

### And is it taxable?

Is ecommerce taxable? Governments have become increasingly aware of trade and traffic over the Internet – particularly in regard to how it might be taxed.

In 1997, members of the Organisation for Economic Cooperation and Development met business leaders from the cyberworld to consider how to tax ecommerce. The result was mixed: the US wanted to stay clear of taxes, EU members were divided. One suggestion has been for a 'bit tax'. Companies would pay, say 1% per megabit of data moving in and out of a country. This system would mean hard core porn is taxed just the same as an educational journal.

# Charging for services

- 3 'Clubs' or 'User Groups' will be promoted, offering a wider range of information or access in return for the provision of personal information which will be of use for marketing purposes: name and address, email number, age, reasons for interest in English and so on. The benefits might include access to an ezine or tips on examination technique. (This is the strategy currently adopted by online newspapers, such as *The Economist*. Access to the restricted services is password protected).
- 4 A restricted range of information will be provided at no cost, with an indication that a more extensive range of services and information (such as tutor support and advice, online grammars or computer-based language exercises and activities) can be accessed upon pre-payment. (The English Learning Funsite is one of many which has adopted this strategy.)
- 5 Access will be linked to an existing product or service as a value-added element. Subscribing to reference material, as currently used by CoBuild, for example, seems unlikely to catch on widely for some years to come: the conventional form of accessing the required information (i.e. turning the pages of a book) is much more convenient than the

electronic one. It is more likely that the conventional reference source (textbook, dictionary etc), whether in book form or on CD-ROM, will be supplemented by Web access for updates, or for enhanced services such as meeting the author, or downloading additional exercises or more up-to-date material. (This is the model used by Microsoft for updating their multimedia encyclopaedia Encarta).

- 6 Low online charges will begin to be made for worksheet-based materials, especially by start up companies without an established brand name or the resources to produce multimedia learning materials, using services such as iBill.

## Marketing an online campus

EdUSA International, based in Boulder Colorado, suggests that learning English on the Internet is 'easier, more personalised and less expensive'. EdUSA offers courses in Business English writing, Science and Technology and 'Global Issues: Reading and Writing' in the form of 25-hour courses at \$300 per course. EdUSA advertises the following facilities:

Customised home pages for each course;  
Online registration;  
Audio streaming;  
Video;  
Interactive syllabus;  
Threaded discussions and real-time conferencing;  
Online webliography;  
Electronic notebooks;  
Online testing;  
Email with unlimited audio;  
Cybercash transaction facility;  
Free monthly electronic magazine;  
Banks of downloadable materials for each course including tip sheets, model texts, and links;  
Free technical customer support for students;  
Online student evaluations of courses and professors;  
Numerous redundant servers that ensure nearly zero downtime;  
An Intranet for professors.

**web Funsite**  
<http://www.elfs.com>  
Adam Rado's English Learning Funsite.

**web iBill**  
<http://www.ibill.com>  
Transaction handling.

**web English Book Centre, Oxford**  
<http://www.englishbookcentre.co.uk>  
ELT bookshop accepting payment by credit card over the Internet.

**web Netbanx**  
<http://www.netbanx.com>  
Agency handling credit card purchases made by Internet from the English Book Centre, Oxford.

## Newspapers online

Interested in the *Financial Times*, the *Borneo Mail*, the *San Jose Mercury News*, the *South Bucks Star*, *Singapore Straits Times* or *USA Today*?

Many sites offering resources for English language learning offer access to newspapers, while some sites are dedicated to newspapers alone. Newspapers may provide local, national and international material which will be invaluable for classroom use. The Australian search site below provides a comprehensive listing of over 3000 newspapers online around the world. Try:

<http://www.webwombat.com.au/intercom/newsprsr/index.htm>



TEFL.net is a useful stopping point for teachers, providing a range of (mostly free) services, including classroom handouts (about 30) for printing and photocopying, plus a monthly emailed ezine.



**T**his section surveys the issues that are raised by the Internet for ELT. Any language school, teacher, developer or provider of services for students now considering expanding the services offered via the Internet will need to consider a complex landscape. Making judgements will demand not only knowledge of the present territory but skills of judgement of the future.

In this section we survey the following key issues: technical, legal and commercial, and educational.

### Technical issues: will it work and will it upgrade?

**Bandwidth** An important issue for Internet usage is transmission speed – how fast can you or your students send and receive data?

A North American academic with a fast, fibre optic connection, might be able to download a long article with charts and graphics in one or two seconds. His or her counterpart in Africa, operating with a slow modem and unstable telephone lines, might take 20 minutes or longer to retrieve the same information.

**The emergence of the V.90 standard**  
The majority of Internet users connect via a modem, a box which converts, or 'modulates' the digital output from

their computer into the analog required by the telephone line and back again. The modem is connected to a standard copper-wire telephone line.

The advantage of this method of connection is that telephone lines are an established infrastructure – so you can theoretically connect your computer to a telephone line in a hotel room in Tokyo just the same as you can in a classroom in Buenos Aires. The problem, however, is that telephone lines have a restricted capacity for transmitting data, while modems offer fast speeds for data transfer.

Thus has emerged a standard for data transfer – the V90. While speeds might increase, in technology terms, any purchase of a modem you make now should be safeguarded: it is unlikely to be superseded or become unworkable within the near future.

The growth of ISDN Integrated Services Digital Network (ISDN) lines have been available for some years now, notably in the UK and Germany. ISDN lines offer data rates of between 64 and 144 kilobits per second, (Kbps), or, twice as fast as a modem connection. These speeds allow ISDN to handle graphics well, and permit limited, slightly jerky real-time video transmission.

The popularity of ISDN is increasing

**The information superhighway – a more appropriate idea is probably that of the 'information goat track'**

**bandwidth**

The capacity of a connection, usually measured in Kilobits per second (Kps).

**kbps**

Short form of Kilobits Per Second, used to identify, for example, how fast data is moved through a modem.

**gopher**

Gophers have now largely been replaced by hypertext although they were important in Web development. With a gopher program a computer user can locate data, but cannot retrieve non-text information.

**MIME**

Multipurpose Internet Mail Extension. MIME was developed to handle the many files that can be sent by email, and is a way of sending information using only ascii characters.

**proxy**

A proxy server holds copies of Web pages frequently called for by users. When you click on a link to fetch such a page, your ISP's computer will first check whether an up-to-date copy is held locally. Proxies help reduce unnecessary traffic on the Internet and can be used on institutional networks to prevent fetches from 'blacklisted' sites.

### Keeping up to date?

The changes occurring in technology can take place much faster than print can keep up. Since the first draft of this book was written, Microsoft has been in court; America Online, the world's largest Internet Services Provider has snapped up Netscape Communications the browser vendor; Sun Microsystems has been challenged over its ownership of the Java language, and Compaq has launched a range of PCs with, it is claimed, modems 300 times faster than the current standard – and which it aims to sell direct over the Internet. We need to bear in mind that yesterday is already Internet history...

### What's the next technology?

One of the headaches of selecting equipment and software is the worry that your investment in 'leading-edge' technology will all too quickly become redundant 'legacy-ware'. But take comfort. Despite many exciting experimental projects, effective language teaching and learning rarely requires the latest technology: teachers and students need to know their way around a technology before it can be used most effectively; it needs to be cheap, and have been around long enough to have acquired support, both from customers and suppliers. The CD-ROM, for example, was introduced in 1985, but is only now in widespread use in language classrooms.

### What's bandwidth?

Bandwidth means, in effect, how much information can be sent through a connection between computers, and usually is measured in bits per second (bps).

As a rough guide, one page of English language text, estimated at 16,000 bits, might be moved by a modem in a second, but a video might require the transfer of ten thousand times as much data.

The digitisation of telephone lines brings additional services to subscribers, but does not increase the bandwidth of the lines themselves. Cable TV companies are often able to offer much higher bandwidth connections to homes, using 'cable modems'.



# The right technology?

as costs fall, particularly in Europe. Priced at £150 to £200 for line installation in the UK, and with a quarterly cost of £50 to £80 for line rental, it remains significantly more expensive than conventional telephone lines, but is an attractive option for institutions.

Prices are set to fall still more in 1999. In the UK, cable companies such as Cambridge Cable are now announcing connection and rental charges which undercut BT. And BT itself has launched a new service, BT Highway, which combines a conventional analog line and ISDN line (ISDN 2e) in a single box, and is aimed squarely at the domestic user. ISDN is, however, at best an intermediate technology. As the Bangemann Report puts it:

ISDN is only the first step. New multimedia services, for instance high quality video communications, require even more performance. ISDN is showing the way, and the next technological wave aims for the multimedia-world.

**Broadband** Broadband technology is available via satellite, cable, wireless and even copper wire, and offers transmission speeds of one megabit (one million bits) per second and upwards. At these speeds, full integration of video, voice, data and video conferencing is achievable. It is broadband which underlies the concept of the 'Information Superhighway'. By compa-

raison, for modems, and even ISDN, a more appropriate concept is probably that of the 'information goat track.'

The market appears to be divided between two competing broadband technologies – one which transmits data via existing telecommunications infrastructure and one which transmits data through fibre-optic cabling.

What the breakdown will be is largely guesswork. Forrester predicts that by 2002, 80 per cent of broadband connections will be ATM (Asynchronous Transfer Mode) via cable, and the remainder by ADSL. (Asymmetric Digital Subscriber Line: see box p. 39.)

Yet it is always dangerous making predictions about a technology which moves so quickly: NTL, one of the largest cable providers in the UK with over two million subscribers, is making ATM available in mid-summer 1999. Their cable modems are said to offer speeds over twice as fast as the latest ISDN, give users a permanent connection to the Internet – and they may bring out the technology at £30 to £40 per month.

At the moment, although the technology exists, it remains expensive for most people apart from corporate users and researchers. While a high percentage of corporate and university users, especially in North America, have access to high-speed connections, most individuals, together with, one suspects, ELT worldwide, are currently restricted to accessing the Internet via conventional

## Modems – today's essential kit

A modem is the piece of equipment which connects computers to each other via ordinary telephone lines: for most home-based users it is essential for access to the Web.

Modems speeds – the rate by which data can be transferred between computers – increased year on year throughout the 1980s, and consequently increased the amount of data that could appear within a second on the computer screen. The typical speed of an early modem was 300 bps (about 30 characters per second): 15 years later, modems were 100 times faster. The increases in modem speeds seemed to peak in 1995, at which point it was widely held that modem technology had reached its limits at 33.3 Kbps.

Since the mid-1990s, a new generation of 56Kbps modems has emerged. As with many 'leading-edge' developments, the new technology was bedevilled on its appearance in 1996–7 by rivalry between two incompatible systems: US Robotics 'X2' and 'K56Flex' from Lucent and Rockwell. The standards war was resolved in early 1998 with an agreement on a 'V.90' standard, to which all 56K modems now conform. And, for the moment, the 56K V.90 modem has become the new standard in countries where the telephone infrastructure is efficient enough to support it. 56 Kbps may seem fast, but it is still far too slow to support good quality video transmission. In practice, connections rarely achieve the maximum speeds. Furthermore, the V.90 standard does not allow equally fast transmission in both directions: data can be downloaded from your ISP faster than it can be uploaded, making the modem less than ideal for video or audio conferencing.

So it seems that conventional modems probably have reached their practical limit – at a speed which still falls short of that necessary for the Information Superhighway to become a reality.

### web Asynchronous Transfer Mode

<http://www.atmforum.com>

This site provides more information on ATM.

### web Modem use 2003

<http://www.gartner.com>

A report by the Gartner Group outlines modem and satellite use in 2003.

### web NTL

<http://www.ntl.com/cablemodems>

The company is expected to bring out a range of low-cost modems in 1999.

### web Broadband use 2002

<http://www.forrester.com>

Forrester predicts that by 2002, 80% of broadband connections will be ATM via cable.

### web The Bangemann Report

<http://www.earn.net/ECreport.html>

The report, 'Europe and the Global Information Society' was prepared for the European Commission.

telephone lines and Service Providers.

What is clearly a mistake is the widespread belief that in the very near future, most Internet users will have the bandwidth to make multimedia a practical reality. The percentages are obviously only guesswork, but it seems clear enough that even in the high technology US, the vast majority of users will be restricted to relatively low speed (56K) modem access for at least the next five years. In the rest of the world (except for isolated pockets such as Singapore, perhaps Malaysia, and parts of Europe) progress is likely to be slower.

*Whose standards are safe to follow?* The pace of technological change and progress means that different products emerge onto the market simultaneously: lack of standardisation bedevils the Internet, and shows no sign of lessening.

The early success of the World Wide Web was due in very large measure to its simplicity. It could present text, sound (in two or three formats), graphics (in one or two formats), video (in two formats), and that was the limit. The same text could be viewed in different ways by different browsers: the emphasis was on content, rather than on form. As the

Web has become more commercialised, so the focus has changed: content has taken a back seat while wars are waged over the form in which it should be presented.

There are several areas in which there now exists a proliferation of products and potential standards – whereas previously a single software program or utility may have dominated. The first attempts at videoconferencing for example on the Internet were made at Cornell University, who developed CU See-me (originally as

freeware, now available only for payment). CU See-me is still widely used, although alternative videoconferencing products have flooded onto the market, including: NetMeeting from Microsoft; ProShare, TeamStation, and PictureTel from Intel; Internet VideoPhone; and Meeting Point from White Pine.

Specific products also exist for education, particularly White Pine's ClassPoint.

On the browser front, Netscape and Internet Explorer continue to dominate the market, appearing in ever new (and ever larger) versions as they battle for market share. Mosaic and Linx still exist, while other browsers have emerged to meet specific needs: Opera

**One of the key issues is copyright: the protection of an individual's real Intellectual Property Rights**

ascii

American Standard Code for Information Interchange. Any roman character - from A to Z - plus numbers and punctuation marks, can be translated into ascii code to be sent and received by computers.

RFC

The informal system which creates standards on the Internet. New standards, each with a reference number, are proposed and published online to a consensus-building body. All new standards carry a Request For Comment number: FTP has the reference number RFC 765.

HTML

HyperText Markup Language. A set of markers which a browser uses to format and display a document.

ASDL

Asymmetric Digital Subscriber Line. An ADSL circuit uses the same copper wires used for normal telephone lines, thus can link into existing infrastructure. The asynchronous element means that data can, for example, be received at speeds up to 1.5 megabits per second and sent at 128 kilobits.

V.90

All 56Kbps modems conform to this standard for data transmission.

### What's cryptography?

Cryptography is the conversion of information ('plaintext') into a coded form that will prevent unauthorised access; the coded data is transmitted to the recipient who turns the encrypted message back into plain text.

Text is coded by a 'key' (a long binary number). In simple encryption systems both the sender and receiver need to know this key. But, of course, ideally neither should transmit the secret key with the text because this would render the text vulnerable to another onlooker. For this reason, more sophisticated codes, such as PGP (see right) use two keys to encrypt text.

### Pretty Good Privacy?

PGP uses an encryption system which relies on two codes rather than one.

To send text by PGP, you might encrypt the text by a code which may be known publicly. Inside the public code is locked a secret key. Only the receiver of your text can decode the message; you, as the sender, will not necessarily be able to unlock the text you've encrypted.

PGP is an example of a one-way system, unlike other forms of encryption which rely on both parties being able to switch the text into plain and encrypted forms. For technical information on PGP: <http://www.arc.unm.edu/~drosoff/pgp/pgp>

### Hacking...

As soon as any program or secure system is developed, there is doubtless a hacker close by.

Hackers and encryption specialists however do have a symbiotic relationship; the hacker's job is therefore not necessarily a malicious one. In the 1980s several companies hired hackers to test whether their computer systems were secure and fit for the robust treatment they would receive in the outside world. Many hackers continue to highlight security problems. Yet famous – or infamous hackers – always grab headlines in the media, and all the better if it's the Pentagon which is the target.

# Standards & security

for users who are tired with the bloatedness of the major players (the whole of Opera will fit onto a floppy disc); or Alis's Tango for browsing in over 90 languages and scripts.

Plug-ins – small programs which add features to larger programs, for example enhancing the functionality of a browser, by playing sound files or animation – continue to emerge at a staggering rate too. The PC Win Resource Centre has categories for plug-ins for multimedia, audio, images, documents, VRML (virtual reality modelling language, or 3D) and 'miscellaneous'. The multimedia category alone lists almost 20 competing plug-ins, in addition to the ubiquitous Shockwave.

What does the buyer then do in this situation? Review the options, carefully study what's available, what's in development, and keep a watchful eye on the trends set by the main players must be key recommendations if you're buying for upgrade and seeking to put in place a system which will work for staff and students.

Adopting a wait-and-see approach is rarely useful. Unfortunately, this 'technological proliferation' is unlikely to settle down in the near future – as some standards are laid down, other technologies will break through old frontiers. For many observers it is a more serious obstacle than transmission speeds to the development of the Internet. As BT's Kris Hampel explains:

There are now dozens of ways of

doing anything on the Net: this means that many are holding back on applications development to see which standards win.

## Legal and commercial issues

**Copyright** The issue of copyright is central to the development of the Internet. Because of the way in which the Internet has evolved, almost any online document can be copied, manipulated and re-distributed at virtually no cost and in a matter of moments. And unlike analogue copying, each copy is identical with the original: there is no downgrading of sound or picture quality.

This ease of handling is, of course, the great strength of the medium; but its downside is that the original creator of the document, the owner of the 'Intellectual Property Rights' (IPR) can be deprived of any remuneration for their work. Unless protection can be given to authors, there is good reason to believe that good quality material will never appear on the Internet.

**Simple copying** Copyright legislation exists in most countries of the world. It evolved, however, to handle conventional 'analogue' material (books, magazines, vinyl records) rather than digital transmissions, and it has particular problems with the Internet. As the Copyright Licensing Agency points out:

Copying starts when you start brow-

## Is the future in broadband?

Broadband technology is the top-end of data transmission, but like most new developments, in the buyer's eyes it is in a state of instability as the industry fights it out to settle on standards.

The two competing technologies at the moment are ADSL and ATM.

ADSL (Asymmetric Digital Subscriber Line) uses existing telecommunications infrastructure, and not surprisingly, it is the technology favoured by telephone companies.

ATM (Asynchronous Transfer Mode) uses fibre-optic cabling, and is promoted by cable operators.

ADSL has been on offer in various forms for several years, but has been held back by the lack of agreements on standards. This may change from the announcement in October 1998 of an agreement by the International Telecommunications Union.

ATM is, on the other hand, a more powerful broadband technology which handles not only the enormous amounts of data required by high-quality, real-time video conferencing, but also the switches required for thousands of simultaneous users. ATM has been trialled by the UK government's Central Computer and Telecommunications Agency, who found that it was quicker to download an image to the PC via ATM than from its own local hard disk.

With technology of this sort, in other words, the real bottleneck is not the network but the PC itself.

For most ELT users outside the large corporate and research worlds, whether or not to invest in broadband technology is not something that will give rise to sleepless nights – the cost simply remains prohibitive, while other technologies provide reasonable efficient data transmission for most routine purposes.

## ...And cracking

A cracker is a person who hacks with a malicious intent. Credit card numbers, information about your identity, employment details, medical records, financial dealings: so much sensitive information about us is stored on databases and on networked systems. So much indeed that consumer pressure groups and civil liberties groups routinely highlight the issues.

As more and more organisations keep electronic databases, such as student records and mail lists, so they are drawn into issues of security, confidentiality and rights of access. Smaller organisations, however, often have no proper policy or guidelines for their staff.



### The PC Win Resource Centre

<http://www.pcwin.com/freeware/browplug.asp>  
Offers plug-ins in a variety of categories.



### Central Computer and Telecommunications Agency

<http://www.open.gov.uk/ccta/rep1-p4.htm>  
UK government's Central Computer and Telecommunications Agency.



### Opera browser software

<http://www.operasoftware.com>  
The Opera is a compact browser in terms of storage space.

sing. Copies are made into your computer's RAM, into your browser's cache, and maybe also at intermediate points on the network such as network caches.

Copying is at the heart of the Internet. Without copying a page from a remote server to your own computer, the World Wide Web simply would not work. Realistically then, browsing cannot be considered breach of copyright. Nevertheless, the Copyright Licensing Agency is cautious:

Provided that you are authorised to access the page in question (e.g. if it is password-protected, you have used your proper username and password), it is probably safe to assume that these copies, at least, are permitted. There is no clear ruling on this question yet though!

The CLA is clear, however, that any copying other than simple browsing requires permission.

The situation on hotlinking, or hyperlinking to other sites remains unclear. The CLA recommends asking permission 'out of common courtesy', but admits the position is uncertain.

*The emerging legislative framework*  
The key issue, however, is not hyperlinking or browsing, but the protection of an individual's real Intellectual Property Rights.

It has been argued that the new technology demands the development of a 'digital diffusion right' (DDR). Several software solutions are being or have been developed – Imprimatur, Copicat, Copearms, and Copysmart, for example – which monitor the transmission of electronic texts.

Yet each time a solution is developed, ways to breach the protection appear on the Web.

The protection of copyright was the key topic of the 1996 Geneva Conference of the World Intellectual Property

Organisation, which agreed measures to protect copyright internationally. These measures have now been ratified

in the US. The new Digital Millennium Copyright Act (passed October 1998) makes it a crime (punishable by \$2,500 per act of circumvention) to 'create or sell any technology that could be used to break copyright protection devices or to commit an act of (copyright) circumvention.'

The Copyright Act (which is likely to be imitated in many other countries in the coming years) contains a range of

**Citing terrorism and organised crime, many governments have legislated to curb powerful encryption**

free-ware

Software which is available for free over the Web. Some free software is written by enthusiasts and may lack proper support. Be careful to check the license of any free software: some may be 'shareware', in which you are expected to send some payment if you decide to use the program.

IPR

Intellectual Property Rights. The rights subsisting in software, or content. IPR represents the commercial value of 'content' in courses and multimedia works.

CLA

Copyright Licensing Agency. This UK agency can provide information and guidance on legitimate copying of published materials. It also issues licenses to institutions to cover photocopying. Similar agencies exist in other countries.

literate

A term used to describe a state of knowledge about computers – knowing your way around a computer, how to solve basic problems and achieve more than using the on/off switch is generally thought to be the mark of a computer-literate person.

password

A secret word or code which people can use to prevent unauthorised access to their materials. People are usually advised not to use passwords that can be easily guessed, and to change their passwords regularly.

#### CLA on copyright

The classroom teacher faces many practical problems when it comes to monitoring the activity of students on the Web. Can you implement, for example, the following advice?

'If you want to print out a Web page, or copy-and-paste anything from a Web page into a document of your own, you should obtain the permission of the copyright owner.... The practice of asking for permission should be encouraged even in the classroom. Children will understand the principles of copyright better if they are encouraged to ask, rather than simply forbidden to make copies.' Copyright Licensing Agency

#### Steps to regulation

There have been several steps to regulate the Internet, with significant markers in the adoption of international rules to extend copyright law to cyberspace. In 1996 the issue was addressed by representatives of over 100 member governments of the World Intellectual Property Organisation – the UN agency administering international pacts on trademarks and copyright.

Agreements were then sought which included ensuring that electronic versions of any copyright work is subject to the same rules and royalty payments; and to extend such rules to temporary copies of the work downloaded from the Internet.



The CopySmart project is designed to protect copyright using security features such as cryptography. CopySmart, drawing upon the security features built into smartcards, aims to be a low-cost model for use in PC environments.

Participants in the security projects include the British Library and the Open University of the Netherlands.

# Who's copying who?

provisions which, broadly, favour the copyright holder over the end user.

Mark Traphagen, vice president of the Software Publishers Association comments,

Right now there are thousands of software pirate sites, bootleg serial number sites, and sites with piracy tools, and this bill gives us a certain remedy against all those people.

Nevertheless, even when international measures are agreed, it is hard to see how they could be effectively policed: notionally it is illegal to copy music onto cassettes; but copying is nevertheless widespread, and is almost impossible to prevent.

*The longer term* The issues involved in Intellectual property rights and the Internet are complex and wide-ranging, and cannot be examined in detail in this book. Broadly, there are two positions. The first argues that copyright has successfully evolved to handle photography, sound recording, film, sound broadcasts, TV and computer programs, and can therefore be expected, eventually, to come to terms with the Internet. The second position is more radical, and sees the Internet as fundamentally different from other media. It suggests that the notion of copyright will fade away: 'content is free', the slogan goes.

Those who argue for the continuance of copyright do so in the belief

that copyright is too crucial to society to be allowed to disappear. If creators of content are not permitted a reasonable reward for their endeavours, what will be their incentive to create? They suggest that policing the problem may be possible through the technology itself.

The opposing view contends that intellectual property, like anything else, is subject to the laws of supply and demand.

The Net dramatically changes the economics of content. Because it allows us to copy content essentially for free, the Net poses interesting challenges for owners, creators, sellers, and users of intellectual property. In this new world of the Net, it is easy to copy information but hard to find it. It is easy to program software to solve problems but hard to define those problems and questions precisely. In the new communities of the Net, the intrinsic value of content generally will remain high, but most individual items will have a short commercial half-life. Creators will have to fight to attract attention and get paid. Creativity will proliferate, but quality will be scarce and hard to recognize. The problem for providers of intellectual property in the future is this: although under law they will be able to control the pricing of their own products, they will operate in an increasingly competitive marketplace where much of

## Who owns your words?

Email is used extensively as a form of 'write-speak' and has its own conventions and codes. Some will dislike its informality; others will consider that it offers a whole new and needed form of communication.

Whatever it is, email is a form of communication that can be easily reinvented for different audiences and purposes.

Take the email message you wrote this morning: the person you sent it to might forward it within minutes to a dozen or more people you never heard of: its contents may be quoted, re-quoted, referred to and referenced, saved as another file, cut and pasted, a paragraph extracted for a word processed hard-copy document, then it's back to an email to be sent off again.

At the very least your original message may be overlaid with additions from other respondents. Your signature may have been removed. The email software responsible for forwarding your message may automatically append another signature. And the computer system may add another layer of codes and ciphers.

The message you intended to go to one person has become part of a collage of messages – and other documents – passed around the world. So who owns it? What rights do you have over your own words?



Copicat – Copyright Ownership Protection in Computer Assisted Training – is aimed to protect multimedia educational material. Essentially, Copicat is a protection system which will seek to prevent illegal copies being made of copyright material. Several heavy-weight parties are involved in its development, from computer specialists through to a multimedia developer, software house, publisher, and library.

**web** Copyright Licensing Agency  
<http://www.cla.co.uk>

**web** Imprimatur  
<http://www.imprimatur.alcs.co.uk>  
The Imprimatur project ended in November 1998, but its site will remain online.

**web** Hotwired  
<http://www.hotwired.com>  
Magazines such as Hotwired regularly feature among the most frequently visited Web sites.

**web** World Intellectual Property Organisation  
<http://www.wipo.org>  
The protection of copyright was the key topic of the 1996 Geneva Conference of the World Intellectual Property Organisation.

**web** News site source  
<http://www.news.com/News/Item/0,4,27440,00.htm>  
<http://st.ne.fd.mdh>

**web** Software Publishers Association  
<http://www.spa.org>



the intellectual property is distributed free and suppliers explode in number. (Esther Dyson, president of EDventure Holdings.)

Because content is so easy to copy and so easy to publish, its value will decline. Customers will be willing to pay not for content per se, but for 'services such as support, aggregation, filtering, assembly and integration of content modules, or training.'

The implication of this is that the role of the publisher will begin to change. One likely development is that they will take on the role of validators of quality. Even at the current stage of development of the Internet, users are daunted by the mass of information available to them. What they will look for in the future is some sort of guarantee that what they read (or rather, what they interact with) will be entertaining, reliable and accurate. They will therefore be willing to pay to visit a site of assured authority rather than a free, or even less expensive site, even if the information contained is, in any particular case, the same. What publishers will be able to offer, therefore, is a reliable source for 'the real thing'.

The arguments for free content are persuasive, and the balance of probabi-

lities is that, in the long term, an increasing amount of ELT content will become available at no charge.

In the immediate future, it is highly unlikely that publishers will place their materials on the Internet on a large scale. They will certainly provide extracts and 'tasters', and will probably develop added-value services such as Webzines, discussion forums for users of a coursebook, additional exercises linked to existing materials and the like. Most original content will come initially from ELT materials writers and teaching institutions. But if they are unable to protect their copyright, how will they be able to cover their costs? Is it possible to make money on the Internet?

**If ELT materials writers are unable to protect their copyright on the Web, how will they cover costs?**

#### *Privacy and security*

The creators of the Internet in the early 1970s never planned to provide a 'secure' service.

The Internet was used chiefly for exchanging academic information and emails, and not enough individuals were on-line for security or confidentiality to be treated as a serious issue. Some of the recent technologies for ensuring security of financial transactions have been discussed. Issues of privacy and confidentiality, however, go beyond commercial interests.

Now that millions of people world-

PCB

Printed Circuit Board. The flat board, which can be made of plastic, used to interconnect electronic components. A motherboard is the main PCB in a computer system.

ribbon

Flexible flat cable often used to connect devices together inside a computer.

UBE

Unsolicited Bulk Email, or in other words, a spam, or email which is delivered unwanted to your mailbox. Also known as UCE – unsolicited Commercial Mail.

depend-ent

Machine dependent software is software which can run only on the computer system for which it was created. Machine independent software – also called platform independent – refers to software which can run on a range of different computer systems.

HDTV

High Definition TV. Screen displays and monitors are constantly upgrading. Associated developments such as digital transmission also help drive up customer expectations.

#### **Is it confidential?**

Many people assume that email is a private communication shared between two individuals. The truth is far from this. Email, unless it is encrypted, is open for practically anyone along the chain of transmission to see and, perhaps, copy.

Sending an email out from your institutional address and, in many countries, your employer has not only rights of access – if they don't like the contents, it could be a dismissable offence. Legal rights over electronic communication are far from being clear, but it seems that in the workplace email is often regarded as being more like a formal letter or memo than informal corridor chat.

web

#### **EFLWeb**

<http://www.u-net.com/eflweb>

EFLWeb calls itself an 'online magazine for those teaching and learning English as a Foreign Language'

web

#### **it's On-line ezine**

<http://www.encomix.es/~its>

A Spain-based ezine for teachers and students, available now in pilot form.

web

#### **The Reporter ezine**

<http://www.mclink.it/com/reporter>

The Reporter, an Italian ezine, offers a similar range of news, articles, links and information for teachers and students.

#### **Bullying by Internet?**

Computer mediated communication has become a central part of workplace culture in many institutions and companies, transforming patterns of communication, and in some cases empowering people lower down in the management hierarchy.

Yet CMC also facilitates some kinds of antisocial workplace behaviour. A survey by Novell in 1997 of 1043 people found that 15 left jobs through bullying via email – including reprimands copied widely to other staff. Some women have reported suffering sexual harassment by email. Fortunately, such instances are, by their nature, self-documenting.



wide are wired, and that the Internet is used increasingly for commercial transactions, the issue of security has become paramount. Internet email messages are sent in electronic 'envelopes'; but these are not the sealed envelopes of the postal service. It is more useful to think of them as postcards, clearly labelled with details of the sender, the recipient and the subject, with the contents available for all to see. It is hard to imagine a more attractive system for a fraudster.

Encryption programs have become widely available since the mid-90s. Most of these work by jumbling the text of an email or email attachment in such a way that it can be re-assembled only with an electronic 'key' or code.

Encryption has been a subject of great concern to governments, who would like to be able to monitor email in the same way (and subject to the same constraints) that they can tap telephone calls. Citing the need to be able to tackle the threats from terrorism and organised crime, many governments have introduced legislation curbing the availability of powerful encryption programs. PGP (Pretty Good Privacy), for example, is widely used by people to protect the privacy of their email – but it has not been granted a license for use outside the US.

Detailed consideration of encryption and steganography (hiding information inside other information) is outside the scope of this book. It is enough to note

that, unless encryption is used, virtually any email sent can be read by other Internet users. One estimate is that over 20 per cent of network messages are copied and stored by someone other than the sender or recipient.

## Educational issues

*Quality* Several times in this book, it has been noted how easy it is for an individual to set up a presence on the Web. For minimal capital outlay, anyone can start up a site, put on materials, and start to offer language services. At the beginning of 1999, there were probably in excess of 800 Web sites offering some kind of English language service or material. Many are very 'thin', little more than a few pages of text. Many more appear extensive, but offer next to nothing apart from graphics and links to other sites. Some blatantly breach copyright by rendering extracts from coursebooks into HTML; others are littered with spelling mistakes. Amongst all this, however, there are probably a couple of dozen worthwhile for the serious student.

Web publishing is entirely different in this respect from conventional publishing. Creating a book is an expensive undertaking: the mere fact that a team of people has gone to the trouble of writing, editing, proofing, printing and binding means that the finished product must be of some value. And the logo of a well-known publisher is a guarantee that, even if the work is not

## Can or can't? Do or don't?

British copyright law has emerged from a series of Copyright Acts, each attempting to broaden the scope of the area in an attempt to extend protection to a widening range of media used by writers, illustrators, photographers, artists and designers.

To extend its reach, the Copyright Act of 1956 was replaced by the Copyright, Designs and Patents Act in 1988. The E.C. Directive 93/98 then set out to harmonise copyright across the European Union, but its implementation depends upon national legislation.

In principle, copyright protection has protected the form of an idea – the way it is presented – and not the idea itself. So a basic storyline cannot be protected, but its expression will be.

Copyright Acts have also sought to protect the forms within categories: original literary, dramatic, musical or artistic works; sound recordings, films, broadcasts and cable programmes; typographical arrangements in published editions. These categories are themselves opened to include computer programs, sculpture, architecture – irrespective of artistic quality.

Much of the above might be applied to the multimedia shows that are so easy to access on the Web. But what of the student who incorporates in their project work a design from the Web, without crediting the source, or without manipulating and reworking the design in sufficient detail to be considered a new work? Are they aware of the issues involved? Can they acknowledge the original authorship? Who owns the copyright if they were to seek permission to reproduce it? Does the original designer have moral rights? Whether Copyright Acts or EU Directives can cover some of the complexities surrounding issues of ownership of electronic forms across national boundaries might only yet be tested by law.



### Free monthly magazine

<http://tefl.net/ezine/index.htm>

Inspire! the TEFL.Net monthly offering, is more a newsletter than an ezine: a single-idea email sent out monthly (and free) to subscribers.



### Copyright issues

<http://www.nlc-bnc.ca/documents/infopol/copyright/dyson.htm>

See, for example, Esther Dyson's article on Intellectual Value.



### Internet Security

<http://www.commerce.net/information/services/security/inet.security.html#1a>

One estimate that over 20% of network messages are copied and stored by someone other than sender or recipient. Commercenet provides FAQs on Internet Security.

relevant to a user's needs, it will not be a waste of time.

The problem of quality control is evident throughout the World Wide Web. Strategies have been adopted to try to provide users with guidance. Some sites display a quotation about themselves from a well-known journal. EdWeb, for example, proudly announces itself as:

An intelligent, detailed, informed and practical guide, both to education related issues concerning the Internet, and to educational resources on the World Wide Web. (Harvard Educational Review)

Others adopt a logo from an umbrella organisation. The Argus Clearinghouse (originally founded by the University of Michigan) scheme for information services is well established, and the 'C-Check' is displayed on many academic sites. So popular has the scheme proved that Argus has been spun off as an independent company and has introduced a 'ratings system' to grade sites in terms of the quality of information they provide.

Other ratings symbols abound. The problem is that the casual user has little idea what the symbols mean; and the technique for cutting and pasting the

little GIF symbols is so simple that it is possible that many sites carry symbols to which they are not entitled. The PointCom 'Top 5%' award system was unfortunately discontinued in 1997, but other sites, such as McKinley's Magellan Internet Guide, continue to offer both an extensive range of sometimes detailed and perceptive reviews of sites together with a rating.

Blue Web'n, a Pacific Bell site for educators, is unusual in actually specifying its rating criteria.

An interesting initiative in the mid-90s was the ESLoop, which has grown from 17 links in 1996 to 92 in mid-1998. The

ESLoop links sites in a linear fashion, taking the user in a full circle. The ESLoop was inspired by Webring, an attempt to link together 'some of the best homepages on the Web'. The ESLoop is not a quality kitemark of any sort:

it has 'no strict guidelines for acceptance save that the site must be relevant and helpful to teachers and/or students of English, and that it does not duplicate an existing ESLoop site to the extent of redundancy.'

Attempts are being made to provide evaluated listings of EFL resources. The Ottawa Carleton District School Board has a database site called 'Computer Resources for ESL' which rates CALL

**If issues of charging and copyright are resolved, materials will emerge. But what kind of materials?**

print-server

A computer in a network which controls one or more printers, queuing print requests from users until the printer is free.

floppy

It is difficult to buy any future-proof equipment. Computer disks in the 1980s were flexible and large format: they gradually reduced in size from 8 inches to 5.25 inches. Meanwhile their storage capacities increased. The word floppy is really part of computer history, but is still used to refer to the now rigid, 3.5 inch disks.

hard disk

The storage capacity of hard disks in desk-top computers has increased dramatically over the last few years, but so has the need for storage. Graphics and sound files, in particular, can easily fill Gigabytes of hard disk space.

cache

A temporary storage for data in computer memory or on your hard disk, from which it can be accessed or processed quickly. Web pages which you have recently viewed will be held in a cache by your browser, so that if you want to review a page you do not need to download it again across the Internet.

netspeak

The jargon word used to describe the Internet jargon.

### A student-eye view

'I thought at first that the Internet was amazing, and I liked the way I could find different pages of information. I could find something about everything!

I didn't like how easy it was to find a site of dirty language: you can type in a word that you think is innocent, but be surprised by what the search finds.

When I'd done a lot of browsing I did get bored and I wanted a structure to help me do something useful. I work on projects now with my teacher where I find new topics, facts, quotations, and it's much better. I do research, and send emails, but I have an aim and a purpose.'

### The teacher's worry...

One of the issues for teachers is how to help students by keeping track of the changing state of Internet resources, as the following shows:

'A worry that I have about using the Web for teaching is that I can check out a Web site one month, announce it to my students the next month, and find that the whole thing has not been maintained, or even finished. I find that that happens quite a lot. Students get frustrated. It seems to me that *maintenance* of Web sites is the next big issue.' Tillyer, A: Contribution to TESLCA-L, March 1996



ESLoop is described on the Lycos site as a 'browsing forum'. The ESLoop brings together a range of ESL sites so that a learner can browse through the sites, touring a full circle. Teachers may find the ESLoop particularly valuable in demonstrating and teaching students browsing and searching activities on the Web. In a controlled and structured journey, students can encounter sites which offer a range of interests from activities to information on schools.

# Can you get the best?

software and ESL/EFL Web sites according to Canadian Language Benchmark levels for reading, writing, and listening and speaking. Over 250 resources were listed as at mid-1998, though only 46 of these are Web sites, and most of the reviews are over a year old.

## Content

Content is a crucial issue for ELT. The Web is a rich resource, but most of the information it holds was not written with the Web in mind, and has simply been copied from a paper source. As far as ELT is concerned, very few organisations have taken the decision to provide content, even on a trial basis. If the issues of charging and copyright are resolved, materials will start to emerge: but what kind of materials?

The development of multimedia materials on CD-ROM provides an interesting parallel. At the end of 1995, there were about 30 CD-ROMs on the market developed specifically for EFL, with perhaps a dozen more in the pipeline. These materials, originally only developed by niche publishers, are increasingly being developed by the mainstream ELT publishing houses. Significantly, however, almost none have been produced with the EFL classroom in mind: they are all directly targeted at the individual learner, whether at home or in an institutional Self-Access Centre. In part, this is due to the nature of the interactivity they provide; and in part, a reflection of the

fact that very few schools are likely to have enough machines for 15 or 20 students to be able to use the materials as a group. The institutional market is insignificant when set against the potential size of the home market.

It seems likely that multimedia (and text) materials on the Internet will develop in the same way: content-providers will aim directly at the home user, rather than at the school. What is less certain is how good this quality will be: the development of hypermedia-based Internet materials requires different skills from those demanded of a text-book writer, and even perhaps of a CD-ROM developer.

## Reliability

Technical reliability is, of course, an ongoing concern in technology-assisted learning: the wise teacher always has a back-up activity ready for when the tape recorder inexplicably refuses either to play or rewind, and when the videotape recorder jams.

Computers are no exception, and there is a rich vocabulary to describe various states of failure: freeze, lock, down, hang, fatal error, locks up, crash, blows away, stiffed, bombed, fall over ... the language extends also to phrases such as describing the computer which has 'joined the bit bucket in the sky'.

An additional problem on the Internet, however, and particularly on the Web, is what one might term 'resource reliability'.

## A score card for your Web site

- ☐ **Format**  
User Friendly; Clear scope, easy to understand and use, includes appropriate, clearly labelled links.
- ☐ **Aesthetically Courteous**  
Graphics are quickly downloaded and relevant, text is easy to read. Background is subdued and coordinates with text colours and graphics. No need to scroll to the right on a 640x480 monitor.
- ☐ **Aesthetically Appealing**  
Attractive and creative use of graphics and colours.
- ☐ **Content**  
Credible; Information is accurate, complete, and maintained.
- ☐ **Useful**  
Content is meaningful, difficult to convey, and/or quintessential.
- ☐ **Rich**  
Information is rich and likely to be revisited.
- ☐ **Interdisciplinary**  
Integrates several content areas or disciplines.
- ☐ **Learning Process**  
Challenges learners to think, reflect, discuss, hypothesise, compare, classify, etc.
- ☐ **Engaging**  
Process engages the learner.
- ☐ **Multiple Intelligences or Talents**  
Effectively integrates at least 3 intelligences or talents (language, maths, intrapersonal, interpersonal, spatial, musical)

To score an application: 0 points for each 'Poor', 1 point for each 'good', 2 for 'excellent'. A total of 20 possible points. Resources, references and tools are not rated on learner process; the score for these types of applications is weighted to yield a total possible score of 20 points.

Source: from Blue Web'n.

**web** **EdWeb**  
<http://edweb.cnidr.org:90/resource.cntnts.html>

**web** **The Argus Clearinghouse**  
<http://www.clearinghouse.net/index.html>  
Scheme for information services.

**web** **IMcKinley's Magellan Internet Guide**  
<http://www.mckinley.com>  
An extensive range of sometimes detailed and perceptive reviews of sites together with a rating.

**web** **Blue Web'n**  
<http://www.kn.pacbell.com/wired/bluewebn>  
A Pacific Bell site for educators.

**web** **ESL Loop**  
<http://www.linguistic-funland.com/esloop>  
The ESL loop links sites in a linear fashion, eventually taking the user in a full circle.

**web** **Webring**  
<http://www.mind.net/sage/webring>  
The ESL loop was inspired by Webring an attempt to link together 'some of the best homepages on the Web'.

**web** **Computer Resources for ESL**  
<http://207.236.117.20/orlac>  
The Ottawa Carleton District School Board has a database site called 'Computer Resources for ESL'.

**web** **Canadian Language Benchmark levels**  
<http://207.236.117.20/orlacback/13.htm>

Sometimes the problems appear to be technical: a page will not appear, or a file fail to download. It might be that the remote server has been shut down for maintenance, or that the site is overloaded with simultaneous accesses, or that the communications links to the country or region are too busy. Alternatively, however, it might be that the requested resource has simply been removed or relocated by its owner. Sometimes you may be informed by error messages, and sometimes they may be written in a helpful style which can allow you to rethink your approach. Some teachers work around this resource reliability problem by downloading individual pages onto their local machine or LAN.

New software, such as 'WebWhacker' by Fore-Front, enables not just individual pages to be downloaded, but entire sites, preserving the hypertext links between pages.

WebWhacker is not perfect: it can lose some of the fancier features of a Web page, and the internal links can sometimes fail, but it is enormously more efficient than downloading pages one by one and re-creating the links locally.



WebWhacker is a program with which you can download complete sites to view offline. Available for installation on a CD-ROM, WebWhacker is designed for speed and flexibility. Teachers may find it useful since it allows sites to be selected in advance for use within lessons; it gets around the problem of sites being slow or unavailable when a student calls.

Training Central to any advance in the uses of IT are the teachers whose daily task is to promote learning. Teachers must be comfortable with technology before it can be used to best effect. Evidence brought before the committee suggests that many teachers are coming to terms rather reluctantly with information and learning technology. There is some suspicion that computers and resource centres are being used to drive down teaching hours with the principal aim of saving money. Some teachers also fear that the provision of learning packages will remove their responsibility for the management of learning. (Report of the FEFC Learning and Technology Committee.)

A key concern about the use of the Internet in ELT is lack of awareness of its implications by teachers, managers and administrators alike.

On the one hand, expectations can be unrealistically high: one teacher interviewed in the research for this book expected to be able to retrieve in-depth articles comparing Health and Safety provision internationally, 'at the touch of a key'.

On the other hand, lack of any sort of formal training often gives rise to complete ignorance about the poten-

#### Receiving training?

On a self-help basis, learning by doing is one of the most practical means, but can lack structure. Self tuition courses via print, video, workshops and multimedia may be of value; colleges run adult courses leading to certification in IT skills; and there may be spaces available on online courses.

Institutions may employ staff to develop a dedicated training curriculum; they may hire consultants for selected sessions, or have in-house staff trained as trainers for the school. Whatever the form of training, it should bring together system knowledge, with curriculum and methodology considerations.

#### boot

Starting up computer systems, and rebooting – turning the system off and on – when the system throws up error messages on screen. Rebooting may not always be the first thing to do if a system administrator is to hand; they may need access to error messages to track the problem.

#### back-up

Taking copies of documents, files or data for storage, to allow recovery in the event of a system crash or the destruction and damage to primary working copies.

#### crash

When the computer fails, the screen 'freezes', and the system remains unresponsive either to typed commands at the keyboard or to clicks and movement on the mouse. An all too common experience.

#### down

When the computer doesn't work due to hardware problems or system failure. The term is usually applied to mainframe computers.

#### offline

When the computer is not connected to the Internet. You can download contents of Web pages to your computer, which means you can then view these pages at leisure without accumulating a huge phone bill.

#### Disabled students

The Internet is proving a valuable resource for many students who have hearing or visual impairment, or other disabilities.

Many Web sites provide support and information on special educational needs. Special hardware and software packages are also more widely available: braille screens and embossers, special large keyboards, software which can magnify screen images. But increasingly, general purpose software can provide important support: voice-operated word-processors, or email readers which read messages aloud, can be found in any software store.

# The problems remain

tial of the new medium, and allows fears and suspicions to continue – whether the worries are about causing the system to crash, breaking equipment, damaging files or software, entering unwanted sites by accident or failing to be seen to effectively manage the learning process.

What is apparent is the need for training teachers in core Internet skills. The important implications for pre-service and inservice training are only touched upon here. This is a key area which needs to be addressed more fully by the ELT profession.

Learning the basics, such as how to use a browser, is a trivial matter. The principles of moving through pages, printing, saving, and so on, can be taught in half an hour and need not be a fearful process. For people new to using the Web and the Internet, some features which may have been fearful can quickly become delightful: email, for example, often comes as a liberation to the first-time user.

But other skills too require attention. How to incorporate technology effectively in teaching methods; how to structure whole courses and individual lessons so that learners are extended and challenged in their range; how to intrigue and delight a learner through progress and achievement through Web interaction; how to arrange and manage, physically, the mix of computers, students, chairs, tables, disks, books, printouts; how to package the

lesson neatly into the time available when the Internet may be slow or unhelpful; how to store work created so that it isn't lost or damaged; how to encourage, inspire, lead, assess...

There is no danger that computers will take over the responsibility of the EL teacher, but with effective training it may be possible for teachers to take over the Web.

## And what happens to investments ...next month?

Many PC manufacturing companies operate on something akin to a 3, 6, 1, rule: three months in designing a new product, six months in the marketplace, and one month to clear the product through the distribution system before the upgrade comes online. And such a system can be applied in weeks, not months.

The pace of technological change does mean that reinvestment in upgrades, in hardware and software extensions, and in staff training is a continuous process. And can be a scary one for budgets and finances.

Stay with the old technology and lose the advantage; go with the new and be a technology pioneer, where gains may sit alongside risks. Starting a buying process at which you may be at any point in the product lifecycle thus means carrying out research into product history and availability. It means working on at least an annual review to evaluate technology installations, listen to staff comments on reliability, access, present and future needs, linking future requirements with business plans, and setting aside regular staff training, programmes of skills development and funding.

But in a world where the lack of an email speaks volumes, can anyone afford not to invest at all?

## Lost in cyberspace?

Sometimes you might be sure that the resources exist, but getting hold of them seems a difficult task. There are several ways of finding, then organising information.

First, if you don't know the Web address of an organisation, try making it up. If you want to find the Web site of IBM for example, your first thought ought to be <http://www.ibm.com>. Many of the larger organisations have tried to ensure that their names can be easily guessed! Second, when you've found it, 'bookmark' it: this means keeping an electronic file of sites which you can use as a personal directory.

## Finding text-books

Many bookshops are now going online, which is good news for the ELT teacher seeking help on methodology, pedagogy, or just some activities and Web tasks that you'd really like to try with your students.

Several specialist ELT bookshops now allow ordering online: The English Book Centre, Oxford, for example, supplies lists of available books, all ordering details and contact numbers. Keltic is another specialist online ELT bookshop. For general books, Amazon.com is perhaps the best known, but Blackwells and Heffers are both large university bookshops with online ordering.



### WebWhacker

<http://www.ffg.com>

WebWhacker and other utilities can be downloaded from this site.



### Report of the FEFC

<http://ncet.csv.warwick.ac.uk/WWW/projects/fefdc/ontents.html>

The Report of the FEFC Learning and Technology Committee is available electronically at this site.



As the Internet grows, it is also developing and changing its nature, opening up new possibilities for its use. This section outlines some of the major trends, demographic, technical and educational.

### How many people are online?

Statistics about the Internet and its projected growth should be regarded with suspicion: in the absence of a controlling body, or central department of information, figures are often a matter of informed guesswork.

In spite of the Internet's connectivity, its extensive online databases, and the evident interest of the international business community in tracking the spread and growth of the Internet, accurate figures are impossible to come by. The problems are compounded by the fact that different researchers have different definitions of what is meant by 'Internet access' or 'Internet user'.

The number of 'hosts' i.e. computers with unique addresses directly connected to the Internet, can be measured accurately, however. Hosts steadily grew in number from 45,000 in 1989 to over 2,000,000 in 1994. Since then, expansion has been dramatic. As of July 1998, Network Wizards report a total

of over 36 million hosts. If growth continues at this pace, over 100 million computers will be connected by the start of the year 2000.

Estimates for the number of users are far more contentious. As of 1998, they vary from 60 to 150 million, according to the methodologies used and the definition of what is a 'user'. The most conservative estimates come from Emarketer, which suggests a total figure worldwide of 60 million 'regular, active users' in mid-1998, with 37 million of these in North America.

At the other end of the spectrum, Nua, a respected Irish agency monitoring Internet developments, claims a world total of 147 million at September 1998.

The true figure for the number of users is likely to lie somewhere between these two extremes. It is clear that the number is large, and increasing rapidly. What is more

important is the penetration of the Internet in terms of a country's penetration. Here, there seems to be enormous variation.

Most observers agree that it is only when penetration starts to approach 20% that the Internet starts to make itself felt in commercial and social terms.

It is widely believed that the Internet

**Access to the Internet does not yet reach more than a small proportion of the world's population**

host

Any computer on a network that provides services for other computers. One host machine may provide many services and hold the Web sites for many organisations.

moderator

A moderator is the editor or gatekeeper of a discussion list who screens messages before allowing them to be distributed to members. Moderation slows the flow of messages and takes considerable human effort, but can ensure a higher quality and focused interaction.

download

To receive data, for example Web pages, from another computer or server. Upload is to send out data, typically by FTP (File Transfer Protocol).

GIF

Graphic Interchange Format. A way of storing, processing or transmitting images over the Internet; GIF files are usually simple images, perhaps built of lines and few colours.

JPEG

Joint Picture Experts Group. JPEG files are preferred for handling complex images such as photographs.

### Where does the Internet reach?

Internet usage reflects a historical communications infrastructure. Africa, for example, which was largely by-passed by the colonial telegraph system, is the least Internet wired, yet 19th century links between the US and Europe have developed to become the major route today for Internet traffic.

Canada and USA 87 million  
Europe 33.39 million  
Africa 1.14 million  
Asia/Pacific 26.55 million  
Middle East 0.75 million  
South America 4.5 million

Estimated Internet users, February 1999.  
Source: Nua.

### How many computers are wired?

The number of computers which are wired into the Internet has been easier to calculate than people, who tend to move between addresses and places. The number of 'host' computers, i.e. computers with unique addresses, is rising and projected, of course, to continue.

1989 45,000  
1994 2,000,000  
1998 36 million  
2000 100 million

Sources for estimated data: Network Wizards and General Magic.

### And how it's all changing...

The figures below, from a survey by Georgia Institute of Technology in 1994 show the dominance of North America in Internet usage.

Yet trends now suggest that the majority of users are outside the US. New technology developments, which to some extent by-pass historic communication routes, will encourage this trend: we will soon see many more users in previously low-usage areas of the world.

North America 72%  
Europe 23%  
Australia 3%  
Japan 1%  
Rest of world Under 1%



# The explosion ahead

## Changing global demography

This is true in the sense that almost every country in the world now has direct access to the Internet, i.e. at least one Internet host physically located in the country. Yet access to the Internet does not reach more than a small proportion of the global population. North Vietnam, for example, connected to the Internet in mid-1995, but no more than a handful of individuals have access, and then only to email. Cost remains the key constraint: availability is not the same as accessibility. The North-South divide is as real on the Internet as elsewhere: the Internet remains accessible to only a small minority of the world's citizens.

The growth of the Internet in less developed areas of the world is being assisted both politically and technologically. The 1997 WTO agreement on the liberalisation of telecommunications is likely to open up the Internet to a growing number of the world's population, replacing governmental monopoly with competition and efficiency.

Similarly, the Iridium system – based on satellite communication – is beginning to deliver state of the art telecommunications from any point on the planet to any other, and is potentially an ideal technology for the developing world. By November 1998, 18 of the planned 66 satellites had been launched, and already messages can be sent via the Internet to an Iridium phone or pager anywhere in the world – even

the most remote sites.

The balance is indeed changing. According to Nua, while Internet usage in Africa and the Middle East remains insignificant, it is growing rapidly in Europe (which accounts for 22% of the total) and above all in the Asia-Pacific region (15%). Though the USA remains dominant, its relative importance is declining. This has implications for the growth of ecommerce, and for the way in which language is used on the Internet.

## An international community

The language balance on the Internet has also changed over the last five years. English was, and remains the dominant language, but other languages are growing fast. Currently, English is probably the language used in over 80% of Web sites, but the situation is changing rapidly. According to Graddol, 'as computer usage spreads, it is predicted that English content on the Internet may fall to 40% of the total material.' (Graddol, 1997, p.51)

Even the highly conservative Emarketer Group projects that the non-US portion of the world will have more Internet users than the US by the beginning of the millennium.

The growth of the Internet has created a huge market for Machine Translation (MT). In part, the problem is that non-English speakers are denied access to most of the material on the Internet, and are unable to interact

## Key moments in history

So many key moments exist for computing, communications technology, the Internet and the World Wide Web that a full history is a research work in itself. The following is a selection of landmarks.

**1858** The first Atlantic telegraph cable: technology which can carry communications across the ocean.

**1898** Valdemar Poulsen invented the telegraphone: electronic waves recorded on a thin steel wire. The beginning of magnetic recording technology.

**1952** The modem appears: computer to computer communication.

**1969** The Internet is often claimed as a development from the US defence department, who needed a US-wide communications network (ARPAnet).

**1970s** The Internet links academic networks for research.

**1980s** The interconnected research networks are converted to use standard protocols. Within a year the number of connected hosts soars from 2,000 to 20,000.

**1989** Tim Berners-Lee develops a simple way of linking computer files to make for easier access.

**1980s** Desk-top and personal computers with modems are affordable by business and home.

**1993** Mosaic software introduced, followed by Netscape: browsers with which people can 'surf'.

**1997** The World Trade Organisation agrees to the liberalisation of telecommunications: companies worldwide offer new services: Mobile phones, free or cheap Internet access, and competitive pricing.

### web History of the Internet

<http://www.hooked.net/netvalley/intval.html>  
For the history and development of the Internet: particularly recommended is Gregory Gromov's 'The Roads and Crossroads of Internet History' at the above site.

### web Network Wizards Report of the Internet

<http://www.nw.com/zone/WWW/report.html>  
In July 1998, Network Wizards reported a total of over 36 million hosts.

### web Emarketer

<http://www.Emarketer.com>  
Conservative estimates of users come from Emarketer, which suggests a total worldwide figure of 60 million 'regular, active users' in mid-1998.

### web Nua

[http://www.nua.ie/surveys/how\\_many\\_online/index.html](http://www.nua.ie/surveys/how_many_online/index.html)  
An estimated 147 million users at September 1998.

### web Growth of usage of the Internet

<http://www.genmagic.com/Internet/Trends/slide-4.html>  
Over 100 million computers are estimated to be connected by the beginning of 2000.

### web World Trade Organisation

<http://www.wto.org/ltwto/press/summary.htm>  
World Trade agreements on deregulation of communications systems will impact on the technologies available.

### web The Iridium system

<http://www.iridium.com>  
Telecommunications from any point on the planet to any other.

with other users. But what is really driving MT is that fact that English-only speakers, particularly in North America, have equally restricted access to materials produced in other languages. Trends such as the growth of non-US users are forcing companies to take the issue of MT seriously for the first time, and products are being developed which will see its greater acceptance and usability.

The last two years has also seen the growth of organisations such as Canada's ALIS, which specialises in multilingual browsers and MT services. Much more widely known is AltaVista's translation service, mediated via Systran, which offers translation between English, French, German, Italian, Spanish and Portuguese. It is easy for sophisticated, plurilingual Europeans to mock the quality of the translations, but it is remarkable that such translation is possible at all, at such speed and at no charge. Translating the libretto of a Donizetti opera from Italian into English can produce a risible result: an opera may be 'in three actions' with an 'average soprano' and a bass translated as 'a bottom'. But it may be possible to get the gist – and the whole operation can be performed in less than 15 seconds.

**If  
Intranets can  
deliver multimedia  
materials to multiple  
classrooms, their  
popularity seems  
assured**

Systran offers a range of products (at \$29 up) which can be downloaded and customised to improve performance. Other MT software houses are moving onto the Internet: Globalink, for example, now offers a plugin which will translate emails for users of Eudora, and markets a product (Web Translator) for translating the contents of Web pages. Like Alis, Globalink also offers a combined machine/human translation service: in Globalink's case, at \$1 per hundred words.

What is significant for the average European and North American user are the plans to offer translations not only between European languages, but also to more 'exotic' ones. Globalink planned to extend its offering to Chinese, Japanese and Russian through 1998, and to have direct translation between all these languages (rather than route everything via English). The company's long-term intention is to develop translation for all commercially viable languages: in Globalink's opinion, around 40 in number.

#### bits

Computers work from Binary digits. A bit is the smallest item of data – either 1 or 0 – from which programs, characters, graphics or other data is built.

#### byte

A single character built from a set of bits. There are usually eight bits to a byte. A kilobyte is 1000 bytes, megabyte is a million bytes; a gigabyte is 1000 megabytes; a terabyte is 1000 gigabytes. But beware: a binary thousand is actually 1024.

#### POP

Point of Presence. A computer at a geographic location, which can be dialled into by users. National and international PoPs are an important resource for email users on the move.

#### POP

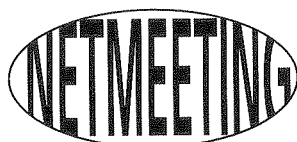
Post Office Protocol. POP3 is the common standard for holding and retrieving email from your ISP.

#### plug-in

A small program which adds specific features to a larger piece of software. The principle behind plug-ins is that a computer user can customise a larger program, such as a graphics package, by installing only the plug-ins they want.

### Virus hoaxes

Viruses are mischievous programs which 'infect' your computer and disks. Virus hoaxes are emails which purport to warn of a new virulent virus and exhort you to copy the warning message immediately to all your friends and contacts. Such hoaxes are becoming almost more of a nuisance than viruses themselves. You will probably receive it from someone you know, it will warn of the most dire consequences (in CAPITAL LETTERS!!!) if you fail to delete the message immediately, and it will refer to an apparently authoritative source (AOL, FCC). Please don't fall into the trap by helping propagate such chain emails.



NetMeeting is a program from Microsoft which facilitates private conferences over the Internet. Two people can link by video and sound, or larger numbers can communicate by textual chat. Other facilities include a whiteboard and the ability to share applications. Many educational institutions are now experimenting with NetMeeting (see the case study on p. 29) for distance education and training.

### Machine translation

Will we all be out of work anyhow? Machine translation (MT) is regarded by some as a breakthrough technology, by others an amusing disaster area. But it has come a long way in a short time.

In the 1940s researchers worked on automatic speech analysis as part of the war effort. By the 1950s Zellig Harris was making headway in the area, and in 1954 IBM demonstrated MT in public. In 1962 the first conference was organised and national research teams took up the challenge. By the 1970s the first voice recognition systems were launched, and by the 1980s the EC translation service was developing its own tools. Now you can buy translation plug-ins for your browser.

# Planning for upgrades

## Hardware and software

**Web PCs** As far as teaching is concerned, an important issue is hardware availability. Although the cost of modern PCs is falling, few ELT operations can afford more than a limited number of machines. It has been argued, however, that the Internet makes many features of the conventional PC redundant. If software can be stored remotely and called up when needed, for example, why is an expensive local hard disc required?

The 'network PC', variously called the 'Web PC', the 'thin client', or the 'NC' (Network Computer) is at its simplest a machine with two plugs, one for electricity and the other for a telephone socket, and has been heavily hyped since 1995. However, none of the machines launched has yet proved a commercial success.

If Network PCs become widely available, they will transform the market for PCs and bring the Internet to a far greater number of homes and schools.

## Intranets

Local Area Networks (LAN) have been a feature of mainstream education – and a number of EFL schools – for some years. They have been successful, but suffer from some restrictions, notably in handling sound and video information, and in connecting different types of computer. Nor have they been fully exploited as a medium for information: users have emailed each other, and

shared resources such as printers, but people have rarely been able to publish or to look at information from elsewhere on the LAN.

Intranets, by comparison, use a browser to access electronic pages, audio and video clips, in exactly the same way as on the Web, except that the information is locally generated and stored, and usage is normally restricted to members of the institution or company.

If the new Intranets can also successfully deliver multimedia materials at an acceptable speed to multiple classroom users, their popularity would seem assured. Delivery of multimedia would address one of the key problems, for example in using CD-ROMs institutionally: the near-impossibility of networking video successfully, which has led to multimedia materials becoming restricted to one or two machines, usually on a self-access basis.

Intranets are now commonplace for ELT publishers and bookshops. Few ELT schools have yet developed such systems but this may change with the more widespread use of Intranets over the next few years.

## Flexibility with hybrid CD-ROMs

In spite of impressive developments in compression software, which now allow video and audio to be transmitted over a conventional telephone line, bandwidth will remain an issue for some years to come. For all that such

## What the kids want?

The music and entertainment world has long been at the forefront of consumer technologies, so it is not surprising that have experimenting with the Internet as a means of reaching young audiences. Sony and Warner have mail-order sales facilities; early in 1998, Island Records, part of the PolyGram group, began Internet sales, followed by Polydor, another PolyGram-owned label.

In February 1999, EMI, Sony, Time-Warner, Bertelsmann and Seagram – the five big record companies – linked with IBM to launch a scheme to offer music downloadable direct from the Internet.

Their aim is, in part, to undermine the growing piracy by which people download music without payment, and to capitalise on the potential sales that the Internet affords.

Under the scheme, 2000 participants will be supplied with equipment which can capture digital recordings – of the Spice Girls, the Rolling Stones and the Smashing Pumpkins – in a way which is faster than piracy routes, financially secure, and which may undercut the high street record store.

The Internet music and entertainment market provides one example both of how ecommerce is expected to expand in the next few years and of the range of tasks people will demand from their desk-top computers.

MTV Europe meanwhile is experimenting with Internet broadcasting. MTV was one of the first mainstream broadcasters to invest in the medium and launched the M2 service in the US in 1996 relayed to six million homes.



**Machine translation & multilingual service**  
<http://www.alis.com>  
Canada's ALIS specialises in MT services and multilingual browsers. Alis's Tango is valuable for browsing in over 90 languages and scripts.



**Systran**  
<http://www.systransoft.com>  
Systran offers a range of products which can be downloaded and customised to improve performance.



**Machine translation**  
<http://babelfish.altavista.com>  
<http://www.altavista.com>  
AltaVista's translation service.



**Web translation software**  
<http://www.globalink.com>  
Globalink offers a plugin to translate emails for users of Eudora, and markets a product (Web Translator) for translating the contents of Web pages.

materials can be provided via the Web, their quality is relatively poor, and transmission speeds uncertain, particularly at peak usage time.

An obvious solution is therefore to use a local medium, such as CD-ROM or DVD, for heavily graphics-intensive material, or for unchanging data; and to connect to the Internet either for updates, for additional materials, or for some kind of communication. This mix – of data which is locally stored and that which can be updated via the Web – is known as a hybrid CD-ROM, and over 300 of these discs are now available. The best known is Microsoft's Encarta multimedia encyclopedia. Purchasers of the CD-ROM first register and then pay a modest charge for downloading monthly updates to the encyclopedia.

No hybrids are yet available for ELT, though several are under consideration. Possible applications are not difficult to identify. CD-ROM based dictionaries could be updated via the Web, or materials provided for use with students. Business CD-ROMs could be enhanced by offering up-to-the-minute links to relevant business sites. General English CDs could offer conferencing facilities where students meet with other students, or indeed teachers, at

fixed times, perhaps in an enhanced MOO environment, where the textual information currently available over the Internet is enhanced by graphical images loaded from the CD-ROM.

### Interactivity with Java

Connecting together the millions of computers on the Internet is no mean achievement. Thanks to transmission protocols (TCP/IP) any computer on the Internet can 'speak' to any other. But the fact that they can speak does not mean that their conversation is useful.

A computer with a browser can read any page on the Web, no matter what kind of machine it was generated on. But it cannot run a program sent to it by the remote machine, unless they both use the same operating system.

This can make the Web a slow moving environment.

Since machines have different operating systems and different computer languages, each time the on-screen data changes – perhaps because a graphical object has been moved, or an answer has been evaluated, or a spreadsheet cell calculated – the details have to be carried back and forth over the communications line.

Java is a language, developed by Sun micro systems, which is 'platform

**What is becoming apparent is the need to train teachers in a range of core Internet skills**

#### Web PC

A machine with two plugs, one for electricity and the other for a telephone socket. The Web PC, designed to link in easily to the Web, may be no more than a passing hardware fashion, already overtaken by the low cost of standard PCs and easy access to the Web.

#### intranet

Computers which are linked to each other in a restricted area such as within the same building, similar to a network: an intranet may be 'firewalled', that is, having protections built into it to prevent access by people outside the system.

#### Java

A programming language developed by Sun Microsystems. Java is a versatile language designed for programmers, with which they can create software to be downloaded via the Internet for use on many different computer systems. Java programs can be included in Web pages to increase their functionality and attractiveness.

#### DVD

Digital Video Disk. A storage medium for digital information which may replace CD-ROM. DVD-ROM, with a greater storage capacity, is more suited to multimedia software, and can store the content of multiple CDs on a single disk. Complete feature films can be published on DVD.

#### hybrid

A combination of two technologies. One of the challenging aspects of the Web for teachers is how quickly the technologies merge, offering greater facilities and capabilities. Knowing some basic technology should be the stuff of training.

### The reality...

Imagine a user filling in a multiple choice question on a remote computer, somewhere on the Web. She enters the option 'c'. Her own computer cannot evaluate if this is correct. She waits for her response to be sent back to the computer which holds the exercise; then waits for that computer to leave its Web page and execute a program to check possible answers, and waits again for the result to be sent back to her. If her connection is good, she might get the response in five seconds; on a poor connection, or with a slow remote server, it might take much longer. How much longer before this tedious process ends?

### New developments...

Digital TV could be a significant moment in how we see our ability to manipulate information. Intelligent TVs now combine conventional TV with interactivity. With intelligent TV a user might recall sequences of a programme; call up background details; search online; ask questions interactively; order the book; fill in a questionnaire – and of course, watch the movie around which all the services have been linked.

Trends encouraging intelligent TV include the installation of digital infrastructure; broadband technology; and standard protocols for data transmission.

### And the vision?

Quicker; smaller; sharper. The trends of miniturisation, high-speed processing, and merging of technologies are easy to spot in the hardware marketplace, while software multimedia packages offering multitasking capabilities and interactivity come online.

For future directions, and technical developments, look out for: DVD (Digital Disk Players) offering high storage on palm-sized minidisk and a flip-up screen; portable GPS systems (Global Positioning Satellites); Iridium satellite telephones; and portable MP3 players (Motion Picture Expert Group's Level 3) for your digital film and music.



# A changing world

independent': a program written in Java 'byte code' can run on any computer. This means that the net can be used to transmit not just screens of information, but complete programs.

These Java programs, called applets, can bring true interactivity to the Web. A student completing a multiple choice program, for example, would have an immediate response: as immediate as the response from a local hard disc. The program, the answers, and the routines needed to process the student's responses could all be transferred and run as and when they were needed.

In principle, this means that computer programs need never be purchased on disc from a local store and installed on a PC: they can be called up over the Internet whenever they are needed. It is Java which makes the Web PCs discussed above a possibility, and which, in the longer term, threatens the stranglehold of Microsoft and Intel. As Sun puts it:

Eventually, your Internet-connected computer won't need to have a hard disk full of software – it will merely reach out over the net for the application it needs, whenever it needs it.

## The expansion of portals

In the face of the enormous amount of material available, the user is likely to look to certain key sites with some sort of guarantee that his or her time will not be wasted, rather than wade through the entire Internet. This line of



### Java

<http://java.sun.com>

Developed by Sun micro systems, Java is 'platform independent' and can run on any computer.

## What's happening at your local language school?

Go to <http://www.englishtown.com> and you'll find a site offering access to a range of English language activities. Nothing perhaps significant in that, but EnglishTown was developed by the Multimedia Department of EF Education, the world's largest language school, with over 70 offices in 40 countries worldwide.

The mix offered by the Englishtown site emerges from EF's 30 years of experience in teaching English 'conventionally', together with the Multimedia Department's five years of experience developing learning tools (the department also produces a range of CD-ROMs).

The Englishtown site can be localised into any of 11 languages, from Chinese, Russian and Korean through to French, Spanish and Swedish, making it usable for beginners, as well as intermediate and advanced learners of English. The site is then organised for students as if they were going to places or carrying out activities, making for a lively mix for either the independent or classroom-based learner.

In addition to casual use, Englishtown also offers EnglishLive!, a 100% Internet teaching programme with courses beginning every other Monday, at a cost ranging from \$99 for four weeks to \$269 for 12 weeks. The site aims to be both pedagogically sound and technologically advanced. In 1998, its first year of operation, Englishtown acquired more than 35,000 members from over 100 countries, and continues to grow rapidly.

Reflecting the range of facilities available in conventional schools, a Virtual School such as Englishtown, has compiled the following resources.

- Bulletin Boards for advice from native speaker teachers, including a Grammar Gallery.
- Two Chat Rooms, a 24-hour open chat area and the 'Hot Topic Tub' – weekly chat sessions led by an instructor.
- A Pen Pal Club.
- The Post Office. Electronic postcards can be sent from here to pen pals or other friends.
- The Game Hall, containing vocabulary games at all levels.
- Lessons sent directly to a student's email account.
- Have You Heard? A phrase-of the day is posted on the site, and can be sent by email.
- Story Stage. A monthly short story, complete with a mini-lesson, available on the site or sent to a student's email.
- A shop for buying CD-ROMS and other ELT material, including books (in association with Amazon).
- Teachers' Inn. Resources including classroom related materials and lesson plans, a job lobby, and pen pals for an entire class.

Will other ELT schools go this way?

thinking has led to the development, in the wider world, of a limited number of portal sites: gateways to quality information, and gateways which provide a range of services, typically free email and some sort of community affiliation.

The same trend is being mirrored in teaching. Sites are now emerging which offer (or claim to offer) a wide range of services. The British Council site has long claimed to provide a 'Gateway to Britain' and is currently undergoing a face-lift to improve its credentials; the Digital Education Network acts as a portal to education services internationally.

As far as ELT is concerned, the first, and probably still the best portal site is Dave Sperling's ESL Cafe. The Cafe offers a wide array of services, and is probably the most visited ELT site on the Web.

Competitors are emerging, however. Other, more recent contenders include the English Club, English Learner, TEFL.Net and TEFL.Com.

### Keeping up with searching

There are few other areas on the Web where change has been as constant and as unremitting as in searching.

The Search Engines are in a permanent state of flux. One example,

AltaVista should be enough to illustrate the changes. AltaVista had major makeovers in the first half of 1998.

- Additional features have been added: it is now possible, for example, to search through the thousands of pictures and photographs in the Corbis collection directly from AltaVista, or translate between various European languages.
- The range of pages searched has been extended: AltaVista now searches from up to three different sources, in addition to its own indices, a service that it calls 'Full View Searching'.
- Filtering has become available, so that sites with 'objectionable material' can be excluded from the search.

- A spell checker has been provided: AltaVista reckons that up to one in five queries fails because of a spelling error.
- Natural language querying is now supported: AltaVista has taken the successful technology of the popular AskJeeves! site so that users no longer need to type:

**A key concern about the use of the Internet for ELT is lack of awareness about its implications**

killfile

A file containing the addresses of people whose mail messages you do not want to read: usually well-known spammers, sources of unsolicited commercial email, or other nuisances. Mail can be filtered by your own mail program or can sometimes be filtered at your ISP.

internet voice

A voice connection established between two computers using the TCP/IP protocol. The quality is as yet poor, and special software is needed by both parties, but a call can be made to the other side of the world for the cost of the connection to your local ISP.

banner

The graphic images running along a Web page to advertise products. Banner ads are something of an advertising art form and have become more sophisticated in a short space of time.

shed-head

A person who disassembles and reassembles computers, often male, and usually in a garden shed.

hang

When the computer system freezes or locks up. There are specific routines usually recommended for turning the system off and on again safely.

web

**The British Council**  
http://www.britcoun.org  
The British Council site has long claimed to provide a 'Gateway to Britain'.

web

**Ask Jeeves**  
http://www.askjeeves.com  
An example of a site accepting natural language querying.

web

**DEN**  
http://www.go-ed.com  
The Digital Education Network acts as a portal to education services internationally.

web

**Newhoo**  
http://www.newhoo.com  
Newhoo is now returning to human-generated directory information.

web

**ESL Cafe**  
http://www.pacificnet.net/~sperling/eslcafe.html  
As far as ELT is concerned, the first, and probably still the best portal site is Dave Sperling's ESL Cafe.

### What's holding it all back?

In a nutshell, there are several factors preventing the explosion of ELT facilities on the Internet:

- the slow development of a successful model for online sales;
- the limits of the 'technical experience' to be had by students;
- the lack of training of teachers in what's available on the Web and how it's best used;
- issues of access and resourcing in the practical teaching context;
- the slow reactions at managerial levels, with fears of large investments and uncertain returns.



# Reinventing ELT services

+cat\* +persian +'how to' +care  
or even: 'Persian cat\*' and ('how to'  
or instructions) and ('look after' or  
'care for' or 'take care').

Instead, AltaVista will support a query along the lines of: 'Can you tell me how I should look after my new Persian cat?' (It should be noted that Natural language querying is sometimes very effective, but at other times a complete disaster. Asking AltaVista 'What is the capital of France?' results in over 52 million hits!)

- The RealNames service is now incorporated, so that people looking for the Louvre can be taken directly to the museum site, and not to pages with remarks such as 'I have never been to the Louvre' or 'I have absolutely nothing of interest to say about the Louvre.'
- AltaVista has changed its site name twice. It is now available at [alta-vista.digital.com](http://alta-vista.digital.com), and at [altavista.-com](http://altavista.-com), and at [av.com](http://av.com)

It seems that keeping up with the search engines (and AltaVista is only one of several hundred, and by no means the most popular) is a full-time job in itself!

The sheer quantity of material on the Web has meant that more and more companies (including Yahoo!) have been forced into using automatic

spider software to build up searchable indices. But although these mechanisms are fast and apparently satisfying (with a good connection, a search for 'Spice Girls' can produce 87,000 hits in less than three seconds) the quality of the results generally leaves a good deal to be desired. In a backlash against machine indexing, Newhoo is now returning to human-generated directory information – but involving Web users around the world, rather than a specialised (and paid) team at company headquarters. Under the slogan, 'Humans do it better', Newhoo's 'Open Directory Project' aims to create 'a self-regulating republic where experts can collect their recommendations, without including noise and misinformation.'

New search mechanisms pop up each month. The current favourite, GlobalBrain, ranks hits not in order of the frequency with which a word appears on a page, but on the basis of how many users worldwide select the page: a sort of 'peer review' system. To this it adds 'profiling' of several thousand lexical items: someone in the US searching for 'football' is likely to be looking for a different set of information from a user in Europe.

In the medium term, programmable 'bots' with the ability to learn a user's predilections should be able to offer a personalised method of retrieving specific information from the Web:

The future of cyberspace belongs to bots. Bots find me the best price on

## Is it available in English?

While the English language is believed to dominate the Web at present, its future is probably as one language among many.

New software support for other languages; the growth of Internet connection by speakers of languages other than English; and machine translation are each contributing to the growth and spread of many languages in cyberspace.

Is it true that the Internet will remain a major driver of English?

At present, the language most widely used is English, but this reflects the fact that 90% of the world's computers connected to the Internet are based in English-speaking countries, as are the computers that host the publicly accessible World Wide Web sites. In this light, it is perhaps not surprising that the majority of both traffic and Web sites are rooted in English: at present, users in other countries, working in other languages, find that if they are to communicate through cyberspace, they must do so in English. (...) As access to the Internet expands in any country, so the profile of its users changes, as do the functions it serves and the range of languages conveyed across it.

Source: Graddol, 1997, p. 50-51

## Info2000

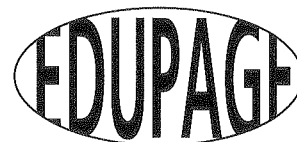
Info2000 is a project by the European Commission designed to stimulate Europe's multimedia 'content industry' – a content industry is concerned with creating and distributing information.

Begun in 1996, the project aimed to help companies use and cohere into multimedia resources the huge amount of information held at different levels and with various rules of access by member countries. Submissions were invited, funding supplied and as a result several multimedia resources for education and training were developed in the electronic publishing marketplace

The project is now drawing to a close.

## Publishing in cyberspace

In 1998 Bertelsmann, already the owners of Bantam Doubleday Dell in the US, acquired Random House, thus strengthening Bertelsmann's position as the world's leading publisher of books in English. The company is also a partner in AOL Europe, has set up booksonline in Europe and has a stake in [barnesandnoble.com](http://barnesandnoble.com) in the US. Estimates suggest half the Bertelsmann group's sales will soon be through electronic and new media sources. Such corporate adjustments represent a commitment to a future of publishing in cyberspace as well as in print. Digital delivery as well as ecommerce is perhaps one step away.



Edupage is an important source for IT-related education information, emailed to you three times a week, and summarising news items from a wide variety of sources. To subscribe to Edupage simply send an email to: [listproc@educum.unc.edu](mailto:listproc@educum.unc.edu)

that CD, get flowers for my mum, keep me posted on the latest developments in Mozambique. (Bots are Hot, *Wired*, April 1996)

It must be admitted, however, that even though bots have been discussed for several years now, they have yet to make an impact on the real world of searching.

### Is ELT rising to the challenge?

*Reactive development* The number of individuals, companies, schools and other institutions with Internet connectivity will continue to increase, and the number of Web sites will grow. Some sites will disappear, as management realise the practicalities of keeping their material fresh and up-to-date, or as schools become aware that their sites are rarely visited; but overall, the quantity of material, if not the quality, will carry on growing.

Institutions will start to become aware that a Web site is not just an electronic version of their brochure, and will look to the Internet for ways of adding value to the services that they are already offering.

Many schools will increase their Internet provision for students. As

more students come to expect the email facilities and Web access that they enjoy in their own schools (particularly in Europe), UK-based English schools will be forced to respond by providing equivalent services.

Other sites will add value by providing access to booksellers, for example. Many ELT sites now have 'associate links' to Amazon, Barnes and Noble, or smaller operations such as the Oxford English Book Centre. Such ELT sites list the books they recommend, or offer supplementary details about a range of publications,

and provide online order forms. The actual transaction and supply, however, is carried out on their behalf by the bookshop, who pass on a share of the profits to the Associate.

But at the same time as much of the UK ELT industry will be attempting to add in the Internet to their existing offering – essentially a reactive strategy – new organisations and services will begin to emerge.

*Market Changes* One of the reasons that ELT has always been an unattractive industry are its low 'barriers to entry', a term taken from Porter, M (1985). Any individual (in most countries) can set up a school with little more

**What has altered over the last five years is the language balance of the Internet: other languages are growing**

back-bone

The primary high-speed line or series of connections forming the main links in the Internet.

PDF

Portable Document Format. A format developed by Adobe which allows documents to be read, complete with their original formatting. This book, for example, is available in PDF format.

LAN

Local Area Network. Computers which are linked to each other and to shared resources such as scanners or printers by a circuit of cables. LANs usually link resources in a restricted area such as within the same building.

applet

A software program, written in Java, which runs inside a Web page. Applets are usually small programs designed to carry out particular tasks.

ATM

Asynchronous Transfer Mode. A technology capable of delivering data in real-time, for example for video conferencing. Data transfer by ATM is fast, using broadband fibre-optic cable.

### Face to face teaching?

It is highly unlikely that computers will take over the classroom teacher. But they may make students more aware of their skills, their levels of proficiency and perhaps even affect patterns of their learning and the way in which they choose courses. Students may begin to change how they use language teaching services and products; they may mix and match the two, combining self-tuition and self-assessment to help decide which course is best suited to their needs; and they may make judgements on how up to date a language school is by its provision for learning through computers.

### A Cyberpunk or a Digerati?

The Internet, like any cultural force, is available for interpretation by young people, and it is perhaps not surprising that young people mould the Internet – just as any other cultural product or movement – into their own identity, reflected in clothing choices, lifestyle statements, and design concepts with which they surround themselves.

1980s Punks and Goths may give way to Cyberpunks – streetwise and anti – while the Digerati – the digital equivalent of the literati – will portray themselves as cyberhip and in the know.

### Games, clubs, movies... and ELT?

Sony, a giant in the games console market, made a shrewd move when it linked its Playstations with trendy clubs: suddenly the fusion of club culture and games consoles made it cool to play games. The additional link with blockbuster movies made games playing a mass attraction that still carried an edge.

For ELT, this indicates two points: first the extent to which culture is a consciously sought-after identity for the youth market, and second, how shrewd links of images, trends and cultures can create a massively successful product.

Can the ELT business, in its own way, create such a sought-after product?

# The next steps

than a room and a blackboard. The real costs to the school are marketing-related – the production of brochures, mailings, development of an agent network and so on.

For the 'virtual school', these barriers to entry are even lower: a computer and an Internet account. Location is no longer significant, nor premises.

The next ten years are therefore likely to witness the emergence of a number of virtual ELT operations. These schools will provide materials (via email and password-protected pages on the Web) and 'gatekeeper' services, pointing students to relevant public domain Web materials. The best will offer high levels of individual attention and fast response times. Of course, such schools will not replace conventional classroom environments. There will always be a demand for physical interaction with real students, and real teachers.

The impact of the new generation of virtual schools on the UK market is likely therefore to be two-fold:

Virtual schools may lead to a decrease in the amount of time a student will wish to spend overseas (i.e. a reduction of overall student weeks);

Such schools, will, insofar as they are the students' first contact with language education, act as a gateway: a recommendation agency for students wishing to pursue conventional courses of study.

## Making your own Web site?

Your Web presence may already be a subject of great debate: Do graphics work? Should it be text-based? How big should your logo be? Can you update it? Who's responsible for the content?

Whatever you design, there are some basic principles which can be identified. There is a balance

to be had between eye-catching design and content: the visitor needs to have an easy entry to your site but it shouldn't look difficult to use. It must be reliable and easy to navigate. Using a site as a collection of varied, vaguely-related information may be a mistake – it's easier to use if the information is focused on a single aspect and changed regularly.

The latter development is important. ELT providers need to build a strong Web presence not only for direct marketing, as at present (i.e. information about the school and the courses on offer) but also in order to attract, retain and ultimately recruit students who will otherwise go elsewhere. Students trying to study English over the Web will be indifferent as to the physical location of the Web site at which they're learning.

Over a period of time, however, students will develop a relationship with the Web site, and the likelihood is that when and if they decide to spend time in a country, they will be attracted to the institution at which the site is based. In a way, this is counter-intuitive: Internet-based learning is often seen as something likely to appeal to individuals who prefer to study on their own, and who seek to avoid conventional contacts.

Experience suggests, however, that individuals who meet in cyberspace very much want to meet each other face to face.



The English Book Centre, Oxford, listed on the British Council Approved Suppliers List Worldwide, supplies books, videos, multimedia packages and computer software to customers around the world. The EBC site offers news, reviews and comments from authors; the company additionally offers email advice about products, services and account options.

## Are language schools adding value?

The Internet offers great opportunities for everyone involved in ELT: for teachers it's a way of identifying existing resources and creating new ones. For students it can be a great way to learn. For the commercial running of ELT centres, the Internet can offer so much more than the promotion of a name within a crowded Web marketplace:

- the increased use of email to keep in touch with students;
- chat rooms for live conversation, monitored by a teacher, and advertising scheduled topics;
- links and access to electronic libraries, dictionaries and to reference points;
- daily diaries; daily quotations; daily messaging
- student ezines, used both as an educational medium and as a promotional tool;
- placement tests, self-assessment points;
- questionnaires and activities;
- multi-media demonstrations
- invitations to potential students;
- up-dated information banks on courses, assessment schedules, administration and timetables;
- Q&A sessions on what the school offers in materials, methods, teaching experiences, skills and other programmes;
- listings of courses, presently offered and forthcoming;
- publications in electronic format;
- access to related services such as booksellers, or visitor information.

# Discussion lists & journals

## Choosing a discussion list

Discussion lists offer many advantages to teachers, learners and those involved in the management and marketing of language schools.

Try:

ACW-L Computers and writing  
[listproc@unicorn.acs.ttu.edu](mailto:listproc@unicorn.acs.ttu.edu)

APPLIX Applied linguistics  
[majordomo@cltr.uq.oz.au](mailto:majordomo@cltr.uq.oz.au)

ATELL CALL  
[majordomo@cltr.uq.oz.au](mailto:majordomo@cltr.uq.oz.au)

COMP-SIG IATEFL CALL SIG  
Members of IATEFL only.  
Send an email message to:  
[Laurent.Borgmann@sk.fh-fulda.de](mailto:Laurent.Borgmann@sk.fh-fulda.de)

CTESL-L [mail-server@rhesys.mb.ca](mailto:mail-server@rhesys.mb.ca)  
Christians who teach ESL

DEOS-L [listserv@psuvm.psu.edu](mailto:listserv@psuvm.psu.edu)  
Distance Education

EFL REGION TESOL SIG  
[majordomo@clc.hyper.chubu.ac.jp](mailto:majordomo@clc.hyper.chubu.ac.jp)

LINGUIST [listserv@tamvm1.tamu.edu](mailto:listserv@tamvm1.tamu.edu)  
Applied Linguistics

MULT-CUL  
[listserv@ubvm.cc.buffalo.edu](mailto:listserv@ubvm.cc.buffalo.edu)  
Multicultural education

NETEACH-L  
[listserv@raven.cc.ukans.edu](mailto:listserv@raven.cc.ukans.edu)  
Teaching on the Net

SLART-L [listserv@cunyvm.cuny.edu](mailto:listserv@cunyvm.cuny.edu)  
Second Language Acquisition

TESL-L [listserv@cunyvm.cuny.edu](mailto:listserv@cunyvm.cuny.edu)  
General ESL/EFL

ESLCC [eslcc-request@hcc.hawaii.edu](mailto:eslcc-request@hcc.hawaii.edu)  
ESL at Community Colleges (US)

EST-L [listserv@asuvm.inre.asu.edu](mailto:listserv@asuvm.inre.asu.edu)  
English for Science and Technology

GLSOL-L [mailserve@uni.edu](mailto:mailserve@uni.edu)  
Gay Educators in ESOL

JALTCALL  
[majordomo@clc.hyper.chubu.ac.jp](mailto:majordomo@clc.hyper.chubu.ac.jp)  
Japanese Association of Language Teachers

## British Council lists

EDBRITS-L  
<http://mis.britcoun.org>

ELTECS-CHI-L  
<http://mis.britcoun.org>  
British Council China English Language Teaching Contacts Scheme  
For enquiries, send an email to [elt.group@britcoun.org](mailto:elt.group@britcoun.org)

ELTECS-L  
<http://mis.britcoun.org>  
British Council English Language Teaching Contacts Scheme

For enquiries, send an email to [elt.group@britcoun.org](mailto:elt.group@britcoun.org)

## Finding journals on the Web

CALL Journal (Swets)  
<http://www.swets.nl/sps/journals/call.html>  
Abstracts only.

Language Learning & Technology Journal  
<http://polyglot.cal.msu.edu/llt/>  
Fully online.

ON-CALL  
<http://www.cltr.uq.oz.au:8000/oncall/>  
Australian Journal. Aims to be fully online in 1999.

CAELL Journal (Computer Assisted English Language Learning)  
<http://www.iste.org/SIGs/CAELL/index.html>  
Formerly CALL Digest. Quarterly in print. Guidelines and other information.

CALICO  
<http://www.calico.org>  
US Organization for CALL; little material online.

CALL Review (IATEFL)  
<http://www.iatefl.org/callsig/callsig.htm>  
Selected articles online.

Journal of Language Learning Technologies (IALL)  
<http://langlab.uta.edu/iall/journal/JournalHome.html>  
Some back issues online.

CALL-EJ (JALT)  
<http://www.lc.tut.ac.jp/caliej/caliej.html>  
Online version of the CALL NSIG Journal (JALT).

ReCALL (CTI Modern Languages & EUROCALL)  
<http://www.hull.ac.uk/cti/eurocall/recall.htm>  
Information, tables of contents and some back issues online.

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# The Internet and ELT

## David Eastment

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