ICT in ELT: how did we get here and where are we going?

Gavin Dudeney and Nicky Hockly

This article looks at how specific developments in information and communication technologies (ICT) have impacted on ELT over the past three decades. Of particular interest is the effect on classroom practice, and on the types of materials available for teaching and learning. We take as our starting point Mark Warschauer’s and Stephen Bax’s taxonomies of the various implementations of computer-assisted language learning (CALL), and what this meant for teachers in the language classroom. This takes us from the mid-1980s until the late 1990s (Part 1: CALL). In Part 2, we examine the shift caused by the rise of Web 2.0, and how this more fundamental change offers a wider range of tools and development opportunities for teachers and learners. Finally, in Part 3, we take a brief look at what the future of technologies might hold for ELT.

Introduction

The integration of technology in ELT has undergone a dramatic shift in the past 25 years. Initially, it was limited to rudimentary word processing and gap-filling exercises, but mass access to the internet, the development of Web 2.0 tools and platforms, and the arrival of the social web and mobile technologies now enable teachers and learners to be globally connected, and globally educated.

Our understanding of the role of technologies in education has also evolved, and with it, the vocabulary we use to describe it. From the early beginnings of ‘computer-assisted language learning’ (CALL) through ‘technology-enhanced language learning’ to today’s emphasis on ‘information and communication technologies’ (ICT), we have lived through a period of huge change in this area of language education.

In this article, we look back at some of the key developments and their effect on ELT, covering developments in hardware (more powerful computers, the arrival of interactive whiteboards (IWBs)), and software (concordance programs, and more recently social networks). We assess where we have come from, and where we may be heading.

Part 1: CALL

The ‘CALL’ era, running from the mid-1980s to the end of the 1990s has been extensively studied by a number of key figures in the field,
most notably Warschauer (1996) and Bax (2003). Each saw three key stages in the development and use of technology in teaching:

Stage 1
Whilst Warschauer refers to ‘behaviouristic CALL’, Bax terms this stage ‘restricted’. The emphasis in this early incarnation was on basic interactions and minimal feedback to the learner, concentrating on decontextualized exercises of the ‘drill and kill’ variety. Such restrictions were, of course, imposed not only by hardware limitations but also by difficulties arising from a real need to understand the process of programming. This was, then, the era of static text: word processors, text reconstruction, simple games, and exercises with automatic (and unsophisticated) feedback. Interactions were largely between learners and content, rather than in any more communicative or productive manner.

Stage 2
In Stage 2, Warschauer (ibid.) refers to ‘communicative CALL’, whilst Bax (ibid.) describes this incarnation as ‘open’. Technological advances led to more sophisticated interactions and better feedback mechanisms with the technology assuming a partial role as tutor, guiding learners to language discoveries, and allowing for more language production over language recognition. The computer also assumed the role of stimulus, encouraging tasks and work that focused on writing, critical thinking, and situated language practice.

Stage 3
‘Integrative’ (Warschauer op.cit.) CALL or ‘integrated’ CALL (Bax op.cit.) is the final stage of these two key taxonomies. In this stage, Warschauer includes prominent developments in multimedia and early internet access as key factors contributing to full integrative implementation, with more focus on the four skills, greater personal interactions between learners and a higher emphasis on computer-mediated communication. Whilst largely agreeing, in 2003 Bax concluded that this stage had yet to achieve full implementation and was ‘an aim towards which we should be working’ (op.cit.: 19).

Hardware
The history of CALL clearly does not begin in the 1980s, yet it was around this time that CALL began to see real traction in language education. Hardware advances influenced this change, in part: cheaper personal computers, colour monitors, and other useful hardware appeared. Computers acquired multimedia capabilities, adding richer colours and sound. Educational CD-ROMs, such as Encarta, were developed, and coursebooks started to include CD-ROMs with additional exercises and multimedia self-study material. Some educational institutions began to invest in computer labs (rooms with banks of computers, which replaced the earlier cassette-based language lab).

Thus, it was in the 1980s that CALL acquired a prominence that, previously, had been limited to a relatively small group of individuals and environments within ELT. This period saw the formation of the IATEFL Computers Special Interest Group (now the Learning
Technologies SIG) and the first edition of their newsletter, the MUESLI News, edited by David Eastment. A review of the archives for that period reveals teachers struggling with hardware and programming issues (networking, programming in BASIC) more than anything else, yet they also reveal forays into text reconstruction and the seeds of electronic corpus analysis with projects such as COBUILD, among others.

Corpora

Corpus analysis particularly had a profound effect on course development and coursebooks as well as on dictionaries and other reference materials. The Collins COBUILD English Course (Willis and Willis 1988), with lexical items and a syllabus derived from corpus linguistics, appeared in 1988. The computer-based analysis of large quantities of written and spoken text appeared to herald a new dawn in materials writing. As Professor John Sinclair wrote in his Foreword to the COBUILD coursebook:

COBUILD has built up a mass of information from the careful examination of many millions of words, and it offers a new style and balance to the syllabus. [...] Now it is possible, with little trouble, to offer the learner plenty of texts and quite natural English, and this Course opens up new experiences in that area. (ibid.: i)

For teachers used to a grammar-driven syllabus, COBUILD was sometimes a step too far, and it had limited uptake in ELT. However, the influence of corpus linguistics is evident in coursebooks, from those with a more overt corpus agenda, such as Natural English (Gairns and Redman 2003) to titles such as Speak Out (Clare and Wilson 2011) where one sees the influence of corpus linguistics in the emphasis on collocations as part of the lexical syllabus.

Learner dictionaries, too, have been influenced by corpora. Rather than using invented sentences, lexicographers began to turn to corpora to supply examples of real English to illustrate how words are used. In words from the Introduction to the Cambridge Learner’s Dictionary (2001):

This dictionary was written using the Cambridge International corpus, a computerised collection of over 300 million words from a huge range of sources [...] This means we do not waste space on rare words that students are less likely to need. The corpus also helps us find natural and typical examples to show how words and phrases are used.

Another example of CALL technologies still with us today is the accompanying CD-ROM with the Cambridge Learner’s Dictionary. This includes the sounds of words, and a searchable thesaurus. Indeed, many of the CD-ROMs still accompanying coursebooks include activities that have their roots in early CALL. The New Headway iTools CD-ROM series (Soars, Soars, and Davies 2009) is a point in case, in which one can still find activities such as text reconstruction.

In short, some of the tools and development from this period of CALL inform much of our current practice both in materials writing and in the classroom.

ICT in ELT
Part 2: the great shift

Warschauer’s and Bax’s taxonomies break off at a pivotal moment in technological development: the large-scale diffusion of networks and internet access, which came towards the end of the 1990s and was firmly consolidated as we moved into the new century.

Having as its central purpose the dual notions of knowledge sharing and communication, the internet neatly paralleled two key concepts of language learning and teaching, and educators were quick to appreciate the potential of the medium. How was this shift reflected in the ELT classroom?

Internet exchanges

Wider internet access in the late 1990s brought programs that increased the potential for culture-based global exchanges. These included early chat programs such as Internet Relay Chat and more entertaining interfaces including the now-defunct Microsoft Comic Chat (http://en.wikipedia.org/wiki/Microsoft_Comic_Chat). Easier access to interesting online resources and more synchronous tools allowed for (at first) text-based chat and email exchanges between classes and learners in different parts of the world. Common teacher projects at this time were largely electronic counterparts to the more traditional ‘penpal exchange’, with email or text chat taking the place of paper-based communications between learners. Websites and projects such as the British Council’s eTwinning initiative also appeared around this time. Today, voice chat programs such as Skype, incorporating more collaborative features such as video chats, screen sharing, and application sharing, mean that international class projects are more accessible and popular than ever before.

WebQuests

Access to the internet also held a particular appeal for those working in a more ‘task-based’ environment. In this context, WebQuests—first formulated by Bernie Dodge in 1995—came into their own, allowing learners not only to work through a rich and varied research experience on the net, but also to transform this knowledge and form it into a range of ‘products’ as they worked. Building on Marzano’s Dimensions of Thinking model (Marzano, Brandt, Hughes, Jones, Presseisen, Rankin, and Suhor 1988), Dodge developed a well-defined, net-based enquiry activity that has become one of the most popular ways of integrating technologies in the classroom. Since this was still very much an era more attuned to consuming resources than producing them, working with online information became the mainstay for many teachers.

Websites and resources for teachers

Alongside these early text-based communicative activities, innovators started to develop websites for English teachers, with ‘Dave’s ESL Café’ being one of the oldest and best known of the early ones. This website offered forums for teacher and student discussions and a Q&A facility for teachers. Dave Sperling was undoubtedly one of the first teachers to see the commercial potential of such services, and his site continues to this day. Were it not for his early experiments, it is unlikely that today we would see sites as ‘Macmillan OneStopEnglish’ or iT’s ‘Online’.
As connections and web content improved, more creative websites became a popular medium for exploitation in the classroom, and the profession soon saw the emergence of materials to accompany them. These came predominantly in the form of teacher resource books, and followed on the back of a small publication by David Eastment, commissioned by the British Council (Eastment 1999).

Eastment’s book was a groundbreaking study into the current effect—and possible future impact of—the internet in the ELT profession and was a significant milestone in CALL history. Though now very difficult to locate, it is still recommended reading for those who are interested in the historical rise of the internet in language teaching.

The end of the decade also saw the ELT publishing industry commissioning teacher education books about the internet, all released within six months of each other in 2000. The books by Dudeney, Teeler (with Peta Grey) and Eastment, Hardisty, and Windeatt followed similar approaches, working through an introduction to net technologies before giving a range of activities and classes for the budding techno-teacher to experiment with.

And in an effort to help the teachers sift through the growing mass of websites appearing on the internet, in 2001, ELTJ inaugurated a regular feature written by David/Diana Eastment entitled ‘Websites for the language teacher’. For a over a decade, this immensely popular column covered topics such as search engines, social bookmarking, and how to keep up to date, as well as sites for teaching young learners, business English, and listening.

At the same time, teachers learnt how to subscribe to early discussion groups in their subject areas. Early such communities were TESL-L and NETEACH-L, both serving many purposes: not only discussing teaching itself, but also often leading to problem-solving discussions for people new to technology. These groups were heading towards what would later be termed ‘communities of practice’ by Etienne Wenger (1996, 1998), with people taking the discussions into their daily work and bringing back their experiences to the group for further discussion and development. It would be fair to say that a lot of the teachers who went online in the early years owe their continued interest in the field to the support and help they found in these kinds of forums.

As tools improved, so did these groups, and today we have an ever-growing collection of professional communities covering all aspects of teaching, and not merely teaching with technology. For technology, one of the most successful of these communities is undoubtedly the Webheads in Action Yahoo Group that helps teachers introduce technology into their teaching. Apart from embodying the values of a true community of practice, this group also organizes regular free online training courses and is a constant source of information and support.

Increased online access also heralded in the first distance teacher training courses for many teachers, with the development of a variety
of virtual learning environments (VLEs) and learning management systems, most notably the open source Moodle. Forward-thinking training providers started to offer online courses for teachers, and teachers in turn took these experiences and transposed them on to their working lives, offering extra resources and sometimes full language courses to their learners.

**Web 2.0**

The major shift, arguably, was the technology transition from Web 1.0 (a static, expert-produced resource) to Web 2.0 (a more creative, consumer-driven space). The advent of Web 2.0 tools ensured that online users with no programming or design skills could now produce resources, and this led to more creative approaches from teachers using technology. Web 2.0 gave rise not only to teacher development resources such as personal blogs and collaborative wiki spaces, but also to more creative practice in the classroom.

Teachers could now work with tools such as DVolver (http://www.dvolver.com/) or Xtranormal (http://www.xtranormal.com/) to create animated cartoons with their learners, and with Glogster (http://www.glogster.com/) to create online multimedia posters. Teachers could have their learners create podcasts with Podomatic (http://www.podomatic.com/) or Vocaroo (http://vocaroo.com/), or add audio commentary to slideshows with VoiceThread (http://voicethread.com/) or Brainshark (http://www.brainshark.com/), to name just a few popular Web 2.0 tools.

**IWBs**

In tandem with the rise of Web 2.0, we also saw the rise of more user-friendly (and more overtly familiar) tools such as the IWB, perhaps the tool most likely to lead to Bax’s notion of ‘normalization’ in technology and teaching (Bax op.cit.: 24).

CALL will reach this state when computers (probably very different in shape and size from their current manifestations) are used every day by language students and teachers as an integral part of every lesson, like a pen or a book. Teachers and students will use them without fear or inhibition, and equally without an exaggerated respect for what they can do. They will not be the centre of any lesson, but they will play a part in almost all. They will be completely integrated into all other aspects of classroom life, alongside coursebooks, teachers and notepads. They will go almost unnoticed. Most importantly, CALL will be normalised when computers are treated as always secondary to learning itself, when the needs of learners will be carefully analysed first of all, and then the computer used to serve those needs.

IWBs are now in classrooms around the world and have had an effect on teaching and on published materials in our profession. The British Council was one of the first institutions in the field of ELT to introduce IWBs into many of its teaching centres, with many others soon following suit. ELT publishers rose to the challenge by creating IWB software versions of their most popular coursebooks. New Cutting
Edge Digital (Cunningham and Moor 2007) was one of the first such examples. Arguably, however, this did not have that much of an effect on teaching practice itself, relying as it did on the much-cited ‘wow factor’ provided by IWBs, and the much-vaunted ‘heads up’ response that putting coursebook content on a screen elicited from students. Probably, the greatest advantage offered by IWB coursebook software was the enhanced audio and video features. Nevertheless, having an IWB and a computer connected to the internet did allow teachers to bring the wealth of resources offered by internet into the classroom much more easily. It remains to be seen, however, to what extent IWBs really have improved student learning or enhanced current methodology.

Social networks

The last step of the great shift heralded by Web 2.0 corresponds to the rise of social networks such as Facebook and LinkedIn, and microblogging sites such as Twitter. These have empowered teachers worldwide to join in a larger conversation with a global community of educators. This is a conversation that many teachers have traditionally been prevented from joining due to the costs and professional time commitments associated with attending face-to-face teacher development courses and conferences.

The reach and ease-of-use of these platforms, coupled with a new-found need for teachers, trainers, and materials writers to engage with a wider audience than they had previously met, have combined to produce a rich and varied tapestry of communication, sharing, and mutual social grooming, which is a compelling space for many. Short conversations and resource sharing on Twitter combine with more focused groups on Facebook, and an ever-increasing number of teacher blogs resulting in an enormous number of daily conversations around every area of the profession.

These so-called personal learning networks are now a part of many teachers’ daily lives online. Their impact has gone far beyond the merely electronic, leading to richer first-time conference attendance for teachers new to such events, publishing opportunities, and other peripheral gains to the profession.

This then is the state of technology in ELT in the year 2012: wider communication and sharing opportunities, better and simpler electronic tools and technologies, and greater access to a world of knowledge. It should, of course, be borne in mind that this situation is still rare in many parts of the world, and in these circumstances teachers are more likely to be reliant on their own technologies than on any access at their place of work. Where technology is concerned, we are never too far away from the notion of the ‘digital divide’, be it economically defined or skills based.

Part 3: the future of technology in ELT

What does the future hold for ELT and technology? Although it is difficult to predict the future, there are some trends within education that will surely impact upon ELT. In some cases, these trends are already starting to appear within our field.
Respected institutions such as the New Media Consortium, responsible for the annual *Horizon Report*, identify educational technology trends in the near future (12 months or fewer), mid-term (2–3 years), and longer term (4–5 years). The 2012 *Horizon Report* (http://bit.ly/tvxEyE) points to the following technologies (among others) as most likely to be integrated into the mainstream in the near future, and in the mid-term: mobile learning, augmented reality (AR), and game-based learning. These are the technologies most likely to have a direct impact on ELT and materials, and we briefly discuss each below.

### Mobile and blended learning

The ubiquity of mobile or handheld devices, particularly mobile phones, has already seen them appearing in mainstream education teacher training. Developing countries have been in the vanguard of educational projects, and some of these are specifically addressing English language learning needs. Especially worth noting are the MILLEE project in rural India (http://bit.ly/hougkW), the Janala project in Bangladesh (http://bbc.in/d7MF6D), and the Text2Teach project in the Philippines (http://bit.ly/A7350b), all of which use mobile phones to deliver English language learning content to less developed areas in these countries.

Increasingly, schools are investing in netbooks or tablet computers for students, rather than setting up computer rooms full of fixed desktop computers. The Conectar Igualdad programme in Argentina, funded by the Ministry of Education, is putting netbooks into all secondary schools, to be used across the curriculum, and the British Council is co-funding English language learning content for these netbooks, as well as supporting teacher training. Given the increasing growth of netbook, tablet computer, and mobile phone use, projects of this sort are set to be taken up in more countries in the future.

What implications does this have for English language teaching materials and practice? Firstly, we already see an increase in the development of mobile friendly apps for smart phones by publishers and by educational institutions such as the British Council. We also see increasing numbers of eCoursebooks and eWorkbooks, in which coursebook components can be downloaded on to learners’ mobile devices or uploaded into a VLE, allowing for easier access outside the classroom. This, in theory, makes it easier for the English language teacher to introduce a blended component (part online, part face to face) to purely face-to-face teaching. This is a trend that we see increasing numbers of teachers following, and which is set to continue.

### AR and game-based learning

AR works by adding a virtual layer of information (in the form of text, images, or video) on to the real world. An everyday example is that of holding up a mobile smartphone to look at a famous landmark. If the smartphone has an AR app installed (such as Layar (http://www.layar.com/)), the smartphone camera ‘reads’ the real world landmark via the phone camera, and provides information about the landmark on the phone screen. In education, this provides the opportunity for learners to integrate language and learning into the experience of everyday
objects and places, and several projects are already underway to develop learning materials for this. The Ubiquitous Learning Institute (http://ed.uiuc.edu/uli/), for example, focuses on developing educational materials for schools, based on AR content.

In the field of ELT, these sorts of projects are still in the hands of enterprising and avant-garde teachers, such as the mobile learning History Treasure Hunt project carried out with young learners by Anne Fox in Denmark (http://bit.ly/rItcol). Although AR-based applications and activities are still to be taken up by mainstream publishers in ELT, given the growth of smartphone ownership, and the rise of tablet computing discussed above, educational materials using AR should be increasingly available in the years to come.

Related to the idea of AR is that of game-based learning. Simple website-based games for language learning have been available for decades and continue to be used, but we increasingly see more sophisticated games being made available for English language learners. One example of this is the immersive 3D world Second Life, where educational institutions such as the British Council, or private companies such as Language Lab, offer English language classes to learners. This reflects the rise of educational or ‘serious’ games in mainstream education, and this is an area that the mainstream ELT publishers are also developing.

Pearson’s Pop Tropica environment for young learners, although 2D rather than 3D, is a case in point. A recent primary coursebook by Pearson, Our Discovery Island, makes use of a simple 2D environment, and offers a materials package that includes print materials, electronic materials, and access to a simple online game-based virtual world.

In the area of methodology and teacher resource books, the 2011 publication of Mawer and Stanley’s Digital Play (2011) is evidence of a growing awareness among English language teachers of the potential of serious games to motivate and engage learners of all ages. This is another area that we predict will grow in the coming years.

**Conclusion**

We see that developments in technology since the 1980s have directly affected ELT materials and practice in a number of ways. Some of these developments, such as the effect of corpus linguistics on materials writing (particularly coursebooks and dictionaries), are still very much with us today. Others, such as the development of the CD-ROM, have become increasingly sophisticated with the addition of video and 3D games.

At the same time, we see that increasing access to the internet, and the rise of Web 2.0 communities and tools, has meant that teachers and learners can not only access a wealth of language learning material online, but can take part in online communities, and produce their own online content.

And, more recently, with the advent of mobile technologies, we see the adaptation of learning materials for delivery via these devices, as well
as an emphasis on learner autonomy and the continued opportunities for learning that our students now have outside of the classroom walls. The blended learning model also places emphasis on students learning outside of the traditional classroom space.

Through all of these changes, though, one could argue that the teacher’s role has remained constant to a certain extent: that of facilitating and guiding our students in the language learning process, providing them with the best possible materials and approaches that are currently within our reach. With technology, that reach has become wider than ever before.

References


The authors

Gavin Dudeney and Nicky Hockly are Directors of The Consultants-E, an online training and development consultancy specializing in the application of ICT in ELT contexts, and offering online teacher training courses. They are prize-winning authors of a number of methodology titles including The Internet and the Language Classroom (2000/2007), How to Teach English with Technology (2007), Teaching Online (2010), and Digital Literacies (forthcoming 2012). Gavin and Nicky are both regular contributors to ELT magazines and journals, and both contribute conference talks and deliver teacher training courses all over the world.

Email: gavin.dudeney@theconsultants-e.com/nicky.hockly@theconsultants-e.com