1. So What is eLearning?

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It might seem strange to start a book on elearning by asking what it is. After all, you've presumably already purchased this book, so you probably have a pretty good idea what it is about. The trouble is, what you call elearning is not necessarily what others mean when they use the same term. Like so much specialist terminology, after a while it becomes ambiguous and confusing, with different camps claiming they have the one true definition. Well, as the author of this first chapter, I have a unique power at my disposal – to squash all this doubt and confusion and settle once and for all what we mean when we say "elearning".

Elearning is when we use computers and the networks to which these are linked to in some way support the learning process.

That's about as broad as I can make it, and it needs to be broad because, in this book, we're going to be adopting a very eclectic perspective on the subject of elearning. We're going to include just about any use of computers, in all their many and various forms, to help people learn. We're happy to include, on the one hand, self-study lessons delivered on a PC, while also accommodating social learning conducted using mobile devices. We're as happy with online video as we are with the use of virtual classroom tools to deliver live group workshops. And while the primary focus of this book is on the use of elearning in the workplace, we understand that very similar applications can be found in schools, colleges and, indeed, the home.

Where does elearning come from?

The term elearning was first coined in October 1999, in a seminar run by a company called CBT Systems (now SkillSoft). At that time, it was quite an innovation to place the letter "e" in front of a verb to recognize the fact that here was an exciting new application of the Internet. Of course "e" actually stands for "electronic", which is a much more mundane and ambiguous term than, say, "online" or "digital", but electronic is what we have to work with.

In 1999, what CBT Systems was primarily referring to when it coined this new term was CBT (computer-based training) delivered not from a CD-ROM but over a network such as an organization's intranet or the global Internet. And CBT is what many people still consider to be what the term elearning really means. So what is CBT?

CBT is the delivery, by computer, of a self-paced lesson to an individual learner. Yes, just like so much elearning. The computer software takes the place of a teacher to carry out the task of instruction more efficiently (CBT is generally regarded as 50% faster than the equivalent classroom experience) and maybe more effectively (although this is much more difficult to prove).

So elearning is CBT delivered online. Well, it has many other forms as we shall see, but this application is worth sticking with for a moment, because it has a long history.

CBT originated in the mid-1970s, before we even had PCs. It was delivered using exotic and highly-expensive early mini-computers and workstations, and sometimes even on those green-screen terminals that connected you to a multi-million pound corporate mainframe. If you were to see one of those early CBT lessons, you would find the format surprisingly familiar. In fact, the self-study tutorial has remained fairly constant in shape and form over more than thirty years. It is ironic, perhaps, that many classroom instructors regard elearning as the new kid on the block, when in fact the careers of some of those working in elearning are longer than the complete lifetimes of the classroom trainers.

Some people think that modern elearning is much more interactive than it used to be "in the old days". Far from it. Interactivity with digital content uses a trivial amount of processing power and was well within the reach of the earliest computers. So, presumably early CBT was much less rich in terms of multimedia? Again, not so. True, early developers had to use all forms of complicated add-ons such as videodisc players and even computer-controllable VHS players to provide audio and video, but they did it just the same. In fact, the most popular term for what we now call elearning in the 1980s was "interactive video".

So elearning as a means for delivering self-paced lessons to individual learners is nothing new. In fact, many of the early CBT diehards can sometimes be every bit as resistant to change as their classroom counterparts. But elearning as of 2013 is a much richer medium than CBT and much more exciting. So what can you do with it now?

Why do so many people dislike elearning?

Actually, plenty of people like elearning a lot, but the problem is not really the medium, it is how it is used. If elearning is only used to deliver very dull, mandatory training then it is not surprising that many recipients of this training will be unhappy; this strategy would be unpopular however it was delivered.

Another potential problem is an over-reliance on self-study. This might be a highly flexible way to deliver a learning intervention, but it only really works in small doses – we are social animals and we like to engage with experts and with our peers. Luckily, elearning is not limited to self-study, as we demonstrate in this chapter.

What forms can elearning take?

Self-study lessons

For continuity, we should start this tour with the format that, as we've already discovered, was formerly known as CBT (actually it was known by many other three-letter acronyms and quite a few rude words as well, but let's not complicate things). CBT delivers a lesson to an individual learner at the learner's own pace. While this format is not new, it still has some important advantages:

- Learners like learning at their own pace, because this is generally less stressful. When you control the pace, you can take your time over the stuff you find difficult and zoom past anything that is old news to you or of little interest. You cannot do this in a classroom, even a virtual one. You're stuck with what all the other participants are getting.
- Learners like learning in small chunks and for good reason – you retain much more. One thing we have learned from cognitive neuroscience over the past ten years is just how easily learners can be overloaded. For the poor learner, many courses are like drinking from a fire hose. When you learn in small chunks, you can focus on a few key principles, reflect on these and hopefully put them into practice.
- Learners don't like to hang around waiting for the next scheduled course. With the instant access we have to information using tools such as Google, YouTube and Wikipedia, we've become accustomed to learning on-demand.

There are advantages for employers too:

- Large numbers of employees can be trained at the same time, which is particularly useful if you're rolling out a new system or policy.
- Assuming you have enough of an audience to justify the development cost, you will achieve massive economies of scale compared to instructor-led events.
- As we've already seen, self-study elearning is twice as fast as the classroom at achieving the same level of learning.

The intention of CBT was always that it would do as good a job as an instructor and in some respects this is true. It certainly delivers a more consistent product than an instructor and doesn't ever suffer from boredom, fatigue or hangovers. Well designed and it will be more clear, concise and rich in media. Where it scores less well is in the extent to which it can adapt to the needs of individual learners. Whether or not you believe in learning styles, we can safely say that all seven billion of us humans are different, and computers don't do as good a job as instructors at empathizing with our differences.

By and large, the discipline of artificial intelligence failed to deliver on its promise. Unfortunately, with its demise, we have seen little or no progress in the degree to which elearning materials are personalized around the unique characteristics of individual learners. We're still at the one size fits all stage.

Computers are capable of delivering highly adaptive, personalized learning, but in this respect we've hardly begun. It does not take rocket science to maintain a digital profile of each learner, in the same way a teacher does, and to use that information in simple ways: to point them to the material that is the most relevant, to suggest material that would remedy any problems they are encountering, to point the learner to next steps. Amazon does this, without an enormous amount of coding, so why not elearning developers?

Now there is a less complex option and that is simply to allow the learner the maximum amount of choice, to do whatever they want, however they want. And choice is a wonderful thing, but only to the extent that the learner has any idea of what it is that they don't know.

Simulations and virtual worlds

Some skills can only be practised in the real world and without a computer in sight. Other skills are much better rehearsed in the security of a virtual world, because that

way there's no risk to reputation, bank balance, health and safety. Would you rather have the airline pilot who takes you on holiday practise on a simulator or in a real plane with passengers? The same goes for surgeons, lorry drivers, emergency workers, operators at nuclear power plants and those who work on oil rigs in the North Sea. They all perform tasks that entail high risks; it makes complete sense that they hone their skills and experience in the wide range of situations that could occur in the real world within the safety of one that is virtual.

Simulations allow people to learn from their mistakes without risk to life and limb and without embarrassment. They are at their most glamorous when they take place in highly-realistic 3D worlds, involving fast action and a hint of danger; but simulations can as easily be found on humble spreadsheets (for a financial simulation, say) or involve tasks no more dangerous than a sales interview. Simulations can be created with authoring tools but most commonly require a great deal of specialist expertise. Unless you are one of these specialists, your role is more likely to be in spotting the opportunity, defining the processes that the simulation needs to model, and helping to support implementation.

Another area of increasing potential is the use of multi-player virtual worlds, which allow participants to interact with each other online in a 3D environment. Technology like this has been used as an alternative to role-playing in a classroom, say to practise interpersonal situations in a retail store, or as a more practical and economic way of rehearsing how to deal with major incidents such as natural disasters, accidents and terrorist attacks. It may seem fanciful that your organization would ever make use of such technology, but remember that this is normal practice for players of online games.

Do I need to be technical to play a role in elearning?

Because elearning works with computers and networks there is a need for some people with specialist technical skills. However, most tasks in elearning require no more technical ability than you would expect from any office worker or competent home computer user. You don't have to be obsessed with technology but you do want to become its friend.

Virtual classrooms

To explain what a virtual classroom is we will have to introduce some words – "synchronous" and "asynchronous" – that you wouldn't normally use in polite company. We are not doing this for effect; it's just that these are the correct words for the job and are commonly used in elearning, so you may as well add them to your vocabulary.

Synchronous communication requires all participants to make themselves available at an agreed time. It's live and it's real-time. It can be contrasted with asynchronous communication, which frees up participants from the need to be available at the same time.

The principal synchronous elearning tool is web conferencing, which can be used to conduct live meetings, training sessions, briefings or presentations via the Internet. The extended functionality of web conferencing systems usually requires participants to download a special client application to their computers. This functionality includes online audio and video, application sharing, electronic whiteboards, shared media (such as PowerPoint presentations), text chat and polling. Most systems will also support voice communication using teleconferencing for those participants who don't have the hardware or the bandwidth to support online audio. Web conferencing systems include Cisco WebEx, Microsoft LiveMeeting, Saba Centra, Citrix GoToMeeting, Adobe Acrobat Connect and Blackboard Collaborate.

A "webinar" is an online seminar, lecture or presentation, delivered using web conferencing software. Webinars are good for sharing ideas and experiences, much like any typical session at a face-to-face conference. A live online learning event (or "virtual classroom" as it's often called) uses the same or similar software to facilitate learning. Of course you could also learn something from a webinar, but in the virtual classroom learning is the explicit purpose.

Learning together online is clearly more efficient than getting together face-to-face: it saves a large amount of money that would otherwise have been spent on travel and subsistence, not to mention all the wasted travelling time. Learning where you normally work is also more environmentally friendly, which has to be a good thing. It also encourages shorter sessions (how many workshops are padded out to last a full day?) and if some element of a session is not directly relevant to you, you can always do something else while you wait.

However, there are also circumstances in which you might get *more* effective results online than you could achieve face-to-face:

- Participants don't need to travel, which means you can arrange a session as soon as the need arises.
- You will find it easier to attract the participation of experts who are geographically distant from you. You may never get a specialist to travel across the world to contribute to your face-to-face event, but they will find it hard to object to making available an hour of their time online.
- Web conferencing allows a degree of anonymity, so introverts may find it easier to contribute than they would face-to-face.
- You can record sessions, so that those who miss a live event can catch up later.

As we've seen, communication can be synchronous or asynchronous, and when you design a learning intervention, you have the choice between the two. Given the advantages of being asynchronous – self-pacing, freedom over when you learn and for how long – there has to be a good reason for going synchronous. The following situations call out for a real-time response:

- When real-time interaction with experts is critical and participants must have questions answered before they can move on.
- When it is important for people to interact and share ideas concurrently.
- When the facilitator must be able to observe that participants have mastered a skill. By engaging in practical exercises in a live event, participants can demonstrate real-time skills and thinking.
- When a live event will help to ensure that a learning task is completed. Participants are more likely to carry out a self-paced task, such as reading or writing up an assignment, if they know a live event is coming up at which they will have to report on their progress. Nancy White describes how "synchronous events can provide a heartbeat for an on-going community, group or network. We put them on our agenda instead of saying 'I'll do that later' and they focus our attention."
- When conveying late-breaking and time-sensitive information.
- When there is a need to adjust the level or complexity of material in real-time based on the way participants are responding to the material.
- When questions and areas of difficulty cannot be easily predicted in advance.
- When there isn't the time or budget to develop asynchronous materials, such as self-paced elearning.
- When the presence of a trainer will contribute significantly to learning. As Jonathan Finkelstein reports: "People need not be present concurrently with an

instructor to simply have information passed on to them, yet the active construction of knowledge by learners through a process of real-time give and take is well served in a live online setting."
- When a guest expert is available for a limited time only and couldn't respond to questions in a forum over a longer period.

While virtual classrooms are a mainstay in many multinational and geographically-dispersed organizations, they are still a complete mystery to others. We can expect to see a major pick-up in the use of web conferencing for learning as time, budgetary and environmental pressures make live, face-to-face communication a luxury for special events only.

Online resources

Interactivity can contribute a great deal to learning:

- It helps to focus the learner's attention (important when you consider the millions of sensory stimuli to which the brain is exposed every day).
- By working with new ideas and information, it encourages the formation of new connections in long-term memory (which is necessary if a learner is going to retain anything that they learn).
- Through reinforcement, rehearsal and practice, it makes it easier for the learner to recall what they have learned when they need it.

So interaction is absolutely vital then. But this interactivity can be achieved in a number of different ways:

- By working with instructors, experts, coaches and peers – asking and answering questions, providing each other with feedback, practising together, discussing different perspectives, and so on.
- By interacting with the learning content itself, as you would with the self-study materials and simulations that we discussed above.
- By the efforts of the learner alone, reflecting, making notes and trying things out. Yes, we can learn without third-party intervention, as anyone who's ever benefited from reading a book, listening to a radio programme or watching a film or TV documentary can attest. And that's all of us, right?

If we doubt whether online learning materials can be effective without being interactive, then we don't have far to look for evidence. Can we honestly say that huge learning gains are not being made from resources such as YouTube or Wikipedia? Clearly what are essentially passive resources can stimulate a great deal of learning, sometimes within a formal context, such as a course, but also quite incidentally as part of our everyday lives.

Online learning resources can take many forms:

- Web articles
- Videos
- Podcasts
- PDF files (useful when a document needs to be printed)
- Slide shows, perhaps with narration so they can stand alone without a presenter
- Screencasts (simple software demos).

And the great thing about content like this is that you don't necessarily have to be an expert to put it together. While not everybody fancies themselves as a writer, artist or director, plenty of people can do a good enough job when it comes to sharing their experiences and ideas. We've already mentioned Wikipedia and YouTube, and both of these depend on content being contributed from the bottom up, by users and enthusiasts. You'll never be able to meet every learning need by publishing formal content on a top-down basis, so don't think of this as competition, just making sure the job gets done.

Online collaboration

We may have started this guided tour with the more familiar forms of elearning but we're going to finish with what could turn out to be the most significant of all. We only have to look at the World Wide Web to see how it has developed in the twenty years since Sir Tim Berners-Lee introduced it to the world, when he worked at the European Centre for Nuclear Research in Geneva.

Although there were exceptions, the majority of early web sites were essentially collections of published documents – useful true, but the user was primarily a consumer, as they were when they read the newspaper or watched TV. Web 2.0 – the read-write Web – changed all that. Our experience of the Web now is primarily

interactive. Whether it's on eBay, Facebook or an online dating site, the Web brings people together as much as it helps people to find content.

Although our interactive online experiences have brought major changes in our lives outside work, it would be fair to say that we have yet to see significant evidence of a similar phenomenon in our 9 to 5 existence. The tools we use to interact with our friends – social networks, blogs, Twitter and so on – are often denied us at work, when we could similarly benefit from interacting with our colleagues.

This is changing, albeit slowly, but the increased expectations of a generation weaned on a diet of constant peer interaction will certainly have its effect in time, and more and more managers who were brought up to expect rigid hierarchical communication will themselves get the message through their own forays into social media and, vicariously, through those of their children. Learning professionals themselves have to contemplate change, as their role as primary information provider is clearly no longer sustainable. The trainer of the future won't be doing so much training; they're as likely to be a coach, a content creator and a curator. We will almost certainly look back in 10–15 years to see this period as a crossroads, as we experience the first real revolution in workplace learning.

In the meantime, there are plenty of organizations, which are making use of social learning within the more formal context of blended learning courses, using forums for group discussions, blogs as a means for reflective learning and wikis for group tasks. It's a step in the right direction.

Does elearning work?

Of course it all depends on what form of elearning you are talking about – self-study lessons, virtual classrooms, online resources, simulations, online collaboration. Each has its own particular strengths and weaknesses.

What use is elearning?

We've looked so far at the forms that elearning can take, but what really matters is what you can achieve with all these options. One way to achieve this is by looking at

the most common educational and training strategies and seeing, in each case, how learning technologies could help:

Exposition

Exposition is the delivery of information from teacher or subject expert to learner. It's as simple as that. Exposition is essentially a one-way process, although it may include some modest Q&A or discussion. The strategy is top-down and teacher-centred because it is the person designing and/or delivering who determines what information is to be delivered and how (and sometimes also where and when).

Exposition can take place in the context of an *event*, such as a lecture, a seminar or a presentation. Historically most learning events have been delivered face-to-face, but there are powerful arguments for using web conferencing to allow more people to participate at less cost and without concern for geographical location.

Exposition can also take the form of *content*. The classic medium for expositional content is, of course, the printed book, although various other forms of "offline media", including tapes, CDs and DVDs, have extended the possibilities to include audio and video. Now most content is consumed online or downloaded for delivery on portable platforms such as iPods, tablets and e-book readers.

Instruction

Instruction, the second strategy, is still a teacher/trainer-centred approach, but is much more carefully crafted to ensure that the learning outcomes are actually achieved, regardless of the learner's ability. In this sense it is process rather than subject-matter driven. This process depends on the explicit and up-front definition of learning objectives and then the careful selection of appropriate activities and resources that will enable those objectives to be achieved.

The process of 'instructional design' is teacher/trainer-centred because it focuses on learning objectives rather than learner goals; on the other hand, the fact that instruction is typically an interactive rather than a passive learner experience, means that the process can be adaptive to some degree to the individual differences of particular learners.

Like exposition, instruction can take the form of a live event or of content. Instructional events can take place in the workplace – what we normally call 'on-job training' – or in a classroom. These experiences can be successfully replicated online in a virtual classroom.

Instruction can also take the form of self-study lessons. While these may have been delivered historically in a rather limited form through workbooks, much more effective results can be achieved with self-paced elearning.

Guided discovery

The third strategy, guided discovery, has many similarities with instruction in that it is very much a structured and facilitated process, but it follows a very different sequence of events.

While instruction moves from theory to practice, from the general to the specific, guided discovery starts with the specific and moves to the general. It is an *inductive* process – it leads the learner towards insights and generalizations, rather than providing these on a plate. Because this process is much less certain and predictable, guided discovery rarely has specific learning objectives – every learner will take out of the process something unique and personal. What they take out will depend not only on the insights they gain from the particular learning experience, but also to a great deal on their prior knowledge and previous life experience.

Guided discovery can take many forms – experiments in a laboratory, simulations, scenarios, case studies or team-building activities. In each of these cases, the learner is presented, alone or in a group, with a task to accomplish. Having undertaken that task, the learner is then encouraged to reflect on the experience – what went well, what less well? How could the successes be repeated and the failures avoided? The conclusions can be taken forward to further exercises and then hopefully applied to real-world tasks.

As we have seen, elearning can play a key role in guided discovery, through the use of simulations and scenarios, providing opportunities that could be difficult or even impossible to replicate in a classroom.

Guided discovery can also take place in a more informal, on-job setting, a good example of which is coaching. The role of the coach is to help the learner to reflect on their real-world experiences, gain insights and make new generalizations that can be tested out on future tasks. While most coaching is conducted face-to-face, there are plenty of possibilities for online coaching using tools such as Skype, web conferencing or even email.

Exploration

Exploration is by far the most learner-centred of the four strategies and the only one that relies on the learner to make all the choices. It also represents the closing of the circle, because as with exposition, the first strategy we looked at, the learning design is both simple and relatively unstructured, in stark contrast to instruction and guided discovery.

With the exploration strategy, each learner determines their own learning process, taking advantage of resources provided not only by teachers and trainers but also by peers. What they take out of this process is entirely individual and largely unpredictable. As such, exploration may seem a relatively informal strategy, but no less useful for that. In fact it's probably the way that a great deal of learning takes place.

Exploration may play a small part in a formal course, perhaps a handout, a job aid or a list of books or links, which learners can dip into if they wish. On the other hand, it could just as easily form the basis for a complete just-in-time performance support system in the workplace.

Online materials already provide hundreds of millions of people with the resources they need to learn – or at the very least to acquire information – as and when they wish. Almost anyone who is computer-literate now turns to Google, YouTube or Wikipedia to answer a question or follow up an interest.

The exploration strategy is further enhanced by collaboration with experts and other learners, through forums, wikis, blogs, Twitter and social networks. With billions of people connected to the Internet, someone who shares your interests or can answer your question will never be far away.

Table 1.1 *Elearning across four educational and training strategies*

	Exposition	Instruction	Guided discovery	Exploration
Online events	Webinars/ webcasts	Virtual class-room sessions	E-coaching	
Online content	Podcasts/e-books/videos/ web articles/ PDFs	Self-paced elearning	Simulations/ scenarios	Performance support materials/videos/ screencasts/web articles/PDFs
Online collaboration				Forums/blogs/wikis/ social networks

Does elearning spell the end for the classroom trainer?

Elearning is disruptive to the status quo, as you would expect with such a major new approach, and it is completely realistic to expect there to be less delivery in the classroom – in fact this has already happened. However, the skills of the trainer will still be needed in the virtual classroom, in moderating collaborative learning experiences and in the creation of learning resources. The role will change, certainly, but it will always be needed.

Moving on

On the one hand, elearning can be seen as not such a big deal: just another medium for the delivery of learning content and just another channel through which teachers and learners can interact. But, as we have seen, this is a particularly versatile medium, capable of delivering a high quality and highly-adaptive multimedia experience on a wide range of devices and with unprecedented scalability.

It is true that there are circumstances in which elearning cannot adequately replace the face-to-face learning experience, but this is not a major concern. Elearning is not the answer to every problem but it is the answer to many. It can be happily blended with more traditional approaches, so we achieve the best of both worlds. All that is needed is an open mind and an active imagination.