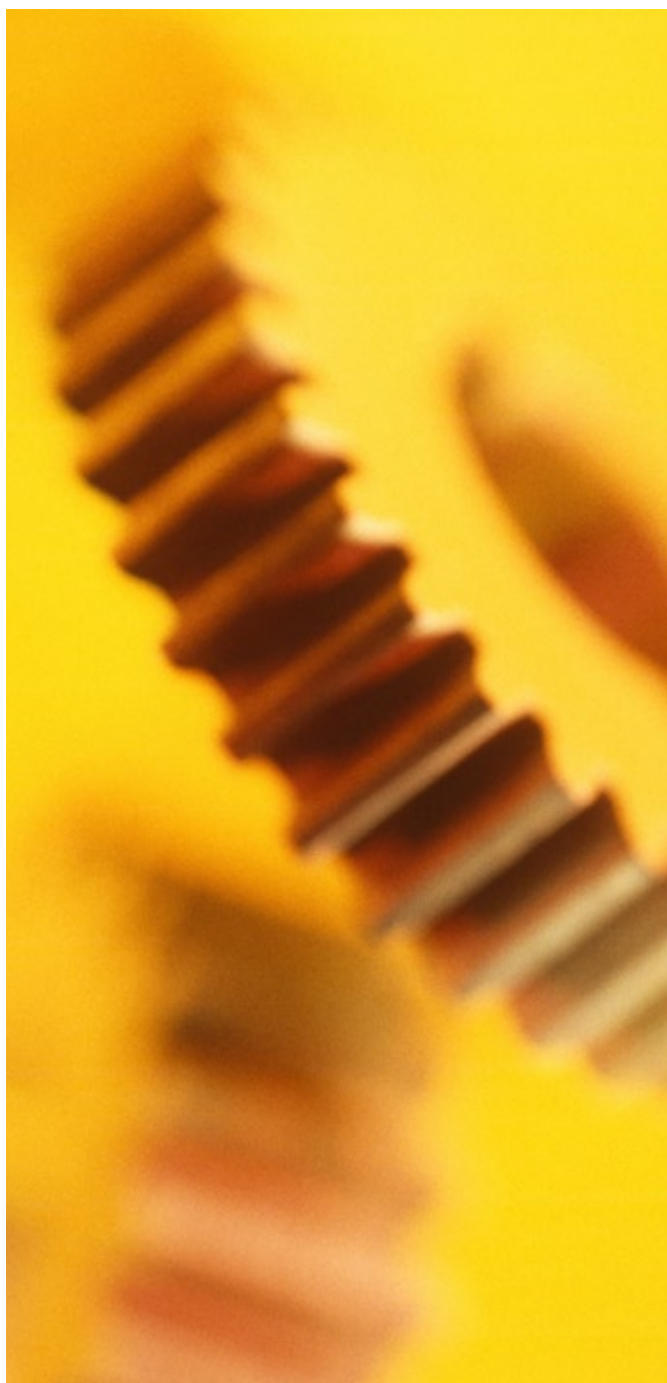


# Rapid development of e-learning: risks and opportunities

by Donald Clark and Andrew Joly



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# Rapid Development - What's New?

## ⋮⋮⋮ Commoditisation of e-learning

Marx may have been wrong on many things but even modern economists agree that he was right in seeing that almost everything gets commoditised. E-learning is no exception. The generic content market has been commoditised down to one main vendor with some second-string players. The corporate LMS market has gone the same way, as has the educational VLE market.

But what about customised or bespoke production? Can you commoditise something that is tailored to the organisation and often to a group within that organisation? Year after year we hear that content developers will be out of business, yet they seem to be coping with commoditisation rather well.

We have seen years of pressure to outsource - to India or elsewhere - on the basis of the commoditisation of labour and production skills. Despite aspirations of these companies to raise their prices to developed country levels, this has not overwhelmed the industry as many had predicted. Further factors such as management overhead, communication difficulties and the need to be close to the client meant that it took some market share, but by no means all of it, or even the majority. In addition, it is clear that the Value Add is in the design, strategy and thought behind the e-learning – outsourcing certainly hasn't shown any savings in this respect.

A second species of commoditisation has come from the tools vendors. Everyone likes the idea of



getting things done faster and good tools can help. The Rapid Development Tools vendors have a place, but may be getting a little hyperbolic. Tools for the rapid development of e-learning have been around for decades. They were being used way back in the early 80s when tools such as Microtext were being used on the first computers. The arguments that teachers, lecturers, trainers and experts will simply do it all for themselves has been around for over 20 years. If time is a judge in these matters, the case against rapid development is formidable.

## ⋮⋮⋮ What's new?

In one sense there's nothing new in the debate. The primary driver is usually cost, with speed as a close second. The real arguments centre around five main issues:

- lower cost content design
- lower cost authoring/coding
- faster production
- radical new tools
- shift to in-house production

The first argument is that costs can be radically reduced by using experts to create content directly, using tools that are easy to learn and use. This 'cutting out the middleman' argument (in this case a Learning Designer) has been around for a long time. True, but it often comes at a cost, with primitive design, poor

interaction and the idiosyncratic and odd use of media.

A second argument is that non-professional authors, as opposed to professional programmers, can be used to code the product, reducing costs. This may also be true, but all of these tools still need skills acquisition and training – and the more useful the tools, the more this is so.

A third argument is speedier production. Training needs to be delivered faster in today's competitive real-time businesses. True - and this needs to be taken seriously. However, we need to be careful in assuming we can eliminate agreement on objectives, sign-offs and quality control checks. At some point the word 'process' kicks in, giving us all a reality check. And besides, 'normal' e-learning development is now so efficient that the time savings in development terms are reducing by the day. Remember, rapid development doesn't mean rapid thinking - good thinking still takes time.

The fact that radical new tools exist is true, but the focus tends to be on PowerPoint plus, rather than the wider range of Web 2.0 tools. Many of the Web 2.0 offerings are, in fact, far more powerful than the page-turning e-learning tools that are often characterised as rapid development. Remember that Word doesn't make a novelist, nor PowerPoint a great presenter. Tools may only account for a small percentage of savings in the overall process of producing good or even usable content.

A fifth, often hidden driver, behind the debate is a position on outsourcing. The search for Rapid Development Tools can be used as an argument for in-house production. This is fine, as long as one recognises the dangers in building in-house units that very often get disbanded at some time in the future. As the whole world outsources, training often swims in the

opposite direction, constantly looking for reasons to insource. Banks, retailers, pharmaceutical companies and financial institutions may know their business, but they are not e-content design companies. They are better off sticking to their core capabilities.

### ⚡ Quicker and cheaper?

The entire debate, however, is often still within an old paradigm. The rapid development cost argument has really been about pressure on the 'cost-per-hour' model in middle-ground e-learning production. It still hangs on to simple, interactive-design models (presentation with multiple choice questions).

The mistake, perhaps, is to see rapid development and Rapid Development Tools, as the sole solution. In practice, rapid development often churns out page-turning courses peppered with multiple-choice questions. This is exactly the hole out of which the e-learning industry has been trying to climb, for the last few years, and with some success. The danger is that this sends us sliding back into this hole. Too much focus on DIY, page-turning content is surely not what learners or organisations want or need. It may be a component in the overall mix, but it should not flood out other species of content.

We should welcome the concept of 'rapid development,' but recognise that mainstream rapid development has been hijacked in e-learning by the same old people touting the same old models. This is not really about radical change; it's simply the commoditisation of a slice of the market.

There are several dangers in the rapid development argument if it's all within an old paradigm. These dangers include:

- subject Matter Experts
- exaggerating productivity of tools
- abandonment of process

We'll look at these in some detail.

On the other hand there are some great advantages to rapid development when it is seen in a wider, more innovative context. This paper argues that rapid development is a much more powerful phenomenon than simple rapid development replacements for traditional e-learning design. It embraces the whole Web 2.0 paradigm.



# Tools, Process, Design and Risk

## ⚙️ Tools don't de-risk projects

There's no shortage of practical tools in B&Q, but there's a huge shortage of plumbers and tradesmen. The rapid development world is similar to the distinction between the DIY and tradesmen markets. They both exist but one should not be seen as overwhelming the other. They're just different.

The 'Tools' word in 'Rapid Development Tools' certainly drives much of the interest. Sure there are some simple, cheap tools around, there always have been. But, as we've seen, just as Word does not a novelist make, so Articulate does not an e-learning designer nor producer make.

The dangers are:

- tools don't produce content/media
- limited output functionality
- limited skills base
- limited ability to update
- commercial risks

One should go into rapid development with one's eyes open. It's true that there are plenty of tools that will allow you to rustle up some screens with forward/back navigation, a selection of questions and SCORM compliance. They will give you PowerPoint Plus. The limited output of many tools is one of their most severe limitations. It must be clear to the learner, client and subject matter expert that the content will be simple. With most of these tools, the price you pay for rapid



development is simple page-turning design. The reason is simple, the more functionality the less rapid it becomes.

A more severe problem is that authoring tools don't produce content/media. DIY content often grinds to a halt as soon as graphics, images, video and sound have to be produced. Sure the tools in these areas have become better and cheaper, but the skills involved in producing good media are the same.

Within your company, you may find a couple of people with these skills, but you have to factor in training on these tools. SMEs don't take kindly to having to learn a new piece of software when they're asked to help out on a training programme, especially if it's an add-on to their existing job. Remember that skills in these tools, unless they're de facto standards, will always be scarce. This leads to problems in sourcing and recruitment. It can also lock the content into an update regime that needs this narrow skills base to update the content.

In commercial terms, Rapid Development Tools can be as much of a trap as a liberator. Many of the small companies have, and will, go out of business. Some tools are also poorly supported.

## ⚙️ Process de-risks projects

All production is a PROCESS. Rapid development is not really about what tool you use. If it is to be successful you must de-risk the process. Effective rapid development is possible if the whole team

agrees to ruthlessly adhere ruthlessly to a sharp, short process and timescale – potentially closing down aspects of choice, creative design and flexibility in return for efficiency. This is not easy, and many rapid development projects turn into costly exercises in reality.

The common risks are:

- poor up-front definition of objectives
- ill-defined content
- poor availability of SMEs
- poor communication
- failure to meet deadlines
- failure to test product

This is why the best and most successful production companies all have defined processes. An effective rapid delivery process is built around well managed hothousing techniques, quick decision making and highly refined systems at key moments of the project – particularly the start and end of the project at the specification phase and QA.

Even those who have adopted rapid prototyping have defined processes. Both clients and vendors know that process and good project management de-risks projects.

### ::: Design do's and don'ts

The issues are that non-professional designers often produce:

- over-long content
- unstructured content
- poor writing
- merely illustrative graphics
- inappropriate interactions
- knowledge over skills

Rapid Development Tools encourage cognitive overload. Irrelevant content is poured into programmes because it's easy to take the text and images and shove them in. In fact, by making it easy for all and sundry to create content it may make matters worse. Indeed, it can push people into creating far more than they need. This includes: text, questions with meaningless or obvious options and non-learning

distractions such as animations. Rapid development of over-long content is not a good thing. This is common when subject matter experts, who rarely understand learning and certainly not the idea of cognitive overload, fail to chunk and pare the content down to a digestible form.

Similarly, providing the user with umpteen template variations does not make for an effective, structured, learning experience. Great e-learning is often about using simple building blocks in an innovative, well thought out and stimulating way. If you have to vary the templates to keep the content interesting, you're heading in the wrong direction.

When text appears in e-learning, it is often overwritten. Writers with little experience of writing for the screen often produce sentences which are too long with block paragraphs of text written in a report style. Writing for the screen is a skill. Readers scan, rather than read. An interactive programme has to be sharp, light and conversational. Few SMEs have this type of writing experience.

Graphics production is also a skill. Producing relevant graphics quickly is not easy. Few SMEs have experience of working with graphics packages to produce images in the right format or file size, let alone to meaningful and aesthetic standards.

Interactions must be meaningful and either effectively stimulate thought or assess the user in some way. The two functions are different. Even the simplest of interactive questions can be presented wrongly. Common errors include asking people to try TRUE/FALSE questions for a second time, disagreement between stem and options in multiple-choice questions, stupid options and so on.

There is also a tendency to take simple nouns from the text and build multiple-choice questions around them. This focus on knowledge simply asks the learner to recall key terms. It's a focus on simple knowledge, rather than understanding and skills.

### ::: Managing risks

This is all about managing expectations. Tools don't in themselves reduce these risks. Rapid development only works when expectations are managed with rigour, and everyone is realistic about the results they are going to get. Every last part of the process must be hammered down and understood at the start – the

possibilities of variation, creative thinking, choice and flexibility have to be treated in a very different way. Of course, this can often mean lowering expectations. That is fine, as long as everyone understands that this is the case.

### ⚡ Subject Matter Expertise

Having a set of spanners doesn't make you a car mechanic. Knowing about cars, how they work, along with lots of experience, makes you a car mechanic.

In the learning trade, things are even more complicated, as in addition to knowing about the subject, knowing something about how people learn is also a condition of success. This is a complex area and SMEs frequently:

- don't get learning
- overload learners
- don't get design
- don't have the time
- are poor on delivery of useable content
- are poor on delivery on time

We must be careful in assuming that SMEs can simply pour their knowledge and skills into a tool, and out pops good e-learning. This is sometimes, but rarely, the case. This is a quote posted on Donald Clark's blog:

"I'd agree that working with SMEs can be one of the most challenging parts of any project, and occasionally they will try and take over the learning and design, usually aspects about which they have no expertise."

Rapid development falls apart quickly if the SME is not aligned with the limitations of the tools, speed of the schedule and expectations for fast production. Even with your SMEs, you need to manage expectations.

Internal SMEs may have specific tacit knowledge about how that organisation works and expertise you can't find elsewhere. They may be the only people with that knowledge, for example on in-house IT systems and product knowledge. What's important is setting the boundaries within which your chosen SME needs to work.

In rapid development one may first want to consider avoiding the inclusion of an SME. They can be unnecessary, especially if they're not the 'best'. Usually the SME will just be the only expert you know or the



best in your organisation.

All too often, the subject-matter expert is someone who used to do the job, or else someone who's done it the longest (or loudest) without necessarily producing consistent or superior results.

In many areas of training, the subject is often covered in excellent detail in major published texts, written by world-class experts (the real SMEs). There is a danger, for content like this, that the specified third-rate SME simply regurgitates stuff from the first-rate world-class authors. It could be argued that what many organisations need is an injection of expertise from the outside, beyond what they already know.

SMEs often don't get learning. Even professional teachers, such as University lecturers, especially the esteemed Professors, sometimes fail to understand the basic principles of learning, providing too much detail, resulting in cognitive overload. Training in these cases is slight and sometimes absent.

SMEs often don't get design. They want to control the design process as they mistakenly regard themselves as experts on interactivity, media mix and production



techniques. SMEs can distort projects and get in the way of good learning if they want to impress rather than contribute. This can distort the process, so that decisions on avoiding cognitive overload, meaningful interactions and use of appropriate media, become difficult. It is important to define what the SME has to deliver, in what format and by what time. You should make it clear if they do not have control over aesthetic or learning issues.

On delivery, they need to know what they're expected to deliver, either guidance or fully formed text. To be fair, they are often overloaded with other work or have little expertise in writing screen text and may struggle to deliver content promptly. If they have a full time job and have not set aside enough time to write and review, you can forget rapid development.

Another clear risk is that SME's know their subject too well – years of explaining their knowledge in a certain way using certain traditional channels make a fresh view unlikely. Real success happens when an SME can see the doors opening onto a new way of presenting their ideas and thoughts, rather than shoe-horning old content into a new format.

An interesting antidote to this is to use recent learners as SMEs. They can be cheaper and may better

understand the learning problems that surround the content because they have recently experienced them for themselves. In addition, they are likely to deliver more effectively because they have fewer responsibilities in the organisation. Carol Twig found this in her research project on Higher Education (HE). Post-grads were often better teachers than the full-time staff.

If you do use SMEs to produce content, to avoid the excesses of overproduced interactive content, SMEs should stick to simple tools and media where they can temper their tendency to over-egg the content. As a general rule, this is best done by limiting them to video, audio, email, blogs, wikis and PowerPoint, where there are definite constraints and accepted rules about size. It avoids pushing them into designing interactions and producing graphics.

### Web 2.0 and other stuff

What's really new in the debate is that in the real world of the web, and not the isolated colony of traditional e-learning, Web 2.0 has shaken up the old content creation and distribution model. There has been a genuine drift towards user-developed content on the web, backed up with easy to use tools and amazingly

# Real Rapid Development

successful collaborative projects like Wikipedia. This is something to be encouraged in the learning world. This is the real world of rapid development, not the production of endless hours of low-end PowerPoint Plus, page-turning content.

Rather than focus on development tools that produce page-turning learning, we need to look at tools that have grabbed the attention of millions of people on the web and adapt them to learning needs. Most of these use tools that are truly easy to use, global, de facto standards with massive user support. They include:

- Word
- blogs
- wikis
- PowerPoint
- podcasts
- videocasts
- record tools

## ⚡ De facto rapid development tools in learning

Rapid Development is not quite what we imagine. Tools are already being used to create most of the content, they're the standard de facto tools; e-mail, Word and PowerPoint. A huge amount of learning is produced, distributed and used in these formats. The skills base is vast making the creation of content easy. The file formats are universally understood and usable,



making distribution easy. Users, especially trainers, are comfortable using PowerPoint or Word documents. It's what the vast majority use in their courses.

Then there's free blogs, wikis, skype and dozens of other tools that are a lot easier and much more widely understood and used than e-learning tools. Isn't this a route we should explore? Blogger software abounds. It has tens of millions of users. That can hardly be said for e-learning Rapid Development Tools.

What is often not considered is improving the design and functional use of these already powerful tools. It may be a better investment to show trainers how to use video, audio, links to other media, animation and useful 'less is more' design tips, rather than just creating, what is, in effect, PowerPoint interspersed with questions.

What's really interesting is the explosion of audio and video. Cheap cameras with superb colour balance and quality output mean that videocasting has become really simple. Similarly with audio.

Then there are tools that record a trainer's talk and slides. This is perhaps the easiest and most productive way to get started with rapid development - simply capture your existing courses.

### ⚡ Rapid resource for rapid tools

Rather than attempt to list all of these tools, there are several general sources that list, describe and link to tools. One of the best is: <http://www.c4lpt.co.uk>

Content Development & Management Tools	All Tools	Free Tools	Commercial Tools
<a href="#">Course authoring tools</a>	67	12	56
<a href="#">Mobile learning authoring tools</a>	7	1	6
<a href="#">Course &amp; learning management tools</a>	106	36	70
<a href="#">Presentation tools</a>	61	25	36
<a href="#">Screen capture, demo, screencasting &amp; simulation tools</a>	47	17	31
<a href="#">Interactivity tools</a>	19	8	11
<a href="#">Quizzing and testing tools</a>	38	15	23
<a href="#">Gradebook tools</a>	6	1	5
<a href="#">Forms, polling and survey tools</a>	43	27	18
<a href="#">Learning games tools</a>	18	4	14
<a href="#">Virtual world tools</a>	24	14	10
<a href="#">Document &amp; spreadsheet tools (and document sharing tools)</a>	56	41	16
<a href="#">PDF tools</a>	27	18	9
<a href="#">E-book tools</a>	22	11	11
<a href="#">Web authoring tools</a>	33	20	14
<a href="#">Widgets and accessories</a>	54	51	3
<a href="#">Blogging tools</a>	68	58	10
<a href="#">RSS feed tools</a>	24	22	2
<a href="#">Podcasting tools</a>	61	38	24
<a href="#">Live broadcasting tools</a>	6	6	0
<a href="#">Wiki tools</a>	46	38	8
<a href="#">Media creation and editing tools (for graphics, images, audio, video)</a>	49	33	16
<a href="#">Electronic Performance Support Systems (EPSS)</a>	6	0	6

Communication, Collaboration and Sharing Tools	All Tools	Free Tools	Commercial Tools
<a href="#">Screen sharing &amp; web conferencing tools</a>	59	24	37
<a href="#">Live chat and Shoutbox tools</a>	41	27	15
<a href="#">Instant Messaging &amp; voice call tools</a>	70	60	11
<a href="#">Discussion forum tools</a>	12	9	3
<a href="#">Email, SMS &amp; video messaging tools</a>	51	40	11
<a href="#">Social bookmarking tools</a>	63	63	0
<a href="#">File storage and sharing tools (for documents, photos, videos,.. etc)</a>	52	51	3
<a href="#">Calendars, meeting scheduling, shared maps &amp; other resources</a>	31	30	1
<a href="#">Note taking &amp; sharing tools</a>	43	40	5
<a href="#">Mind mapping and brainstorming tools</a>	15	12	3
<a href="#">Team and collaboration tools</a>	56	30	29
<a href="#">Social networking &amp; community tools</a>	45	29	16
<a href="#">Content management tools</a>	20	19	3

Personal Learning Tools	All Tools	Free Tools	Commercial Tools
<a href="#">Browsers &amp; extensions</a>	52	51	2
<a href="#">RSS/Feed readers &amp; alerts</a>	49	46	4
<a href="#">Calculators</a>	7	6	1
<a href="#">Online and shared desktops &amp; remote access tools</a>	8	7	1
<a href="#">Personal information managers / GTD organisers</a>	42	35	10
<a href="#">Personal productivity tools</a>	63	50	14
<a href="#">Start pages</a>	26	26	0
<a href="#">e-Portfolio and PLE tools</a>	4	3	2
<a href="#">Tools for mobile devices (phones, iPhones, iPods, PDAs. etc)</a>	32	20	2

### Conclusion

Rapid development may NOT be what we thought it was. If we see it as simply using authoring tools that give us PowerPoint Plus, we'd be doing ourselves a disavour.

Rapid development is a welcome addition to the pantheon of e-learning ideas, but only if expectations around process and output are realistic. In this sense effective rapid development is about service, ways of thinking, keen processes and not tools.

Rapid development means de-risking projects effectively - process short cuts rather than developmental short-cuts using authoring tools. It means clear objectives, simple goals, clarity on media choice and strict control of the production process. You simply have to close down options to get to your goal. It is ideal for quick, short and ephemeral learning.

Where it starts to falter is when it is used in higher learning tasks in its own right.

What is clear, however, is that there is a wealth of good, simple tools which are worthy of being called learning, that millions are already using to produce content fast. It's time the learning world started using these tools and skills to drive rapid learning. Learners are already doing it for themselves. To ignore this fact is to ignore the real world.

### What would you like to communicate?

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