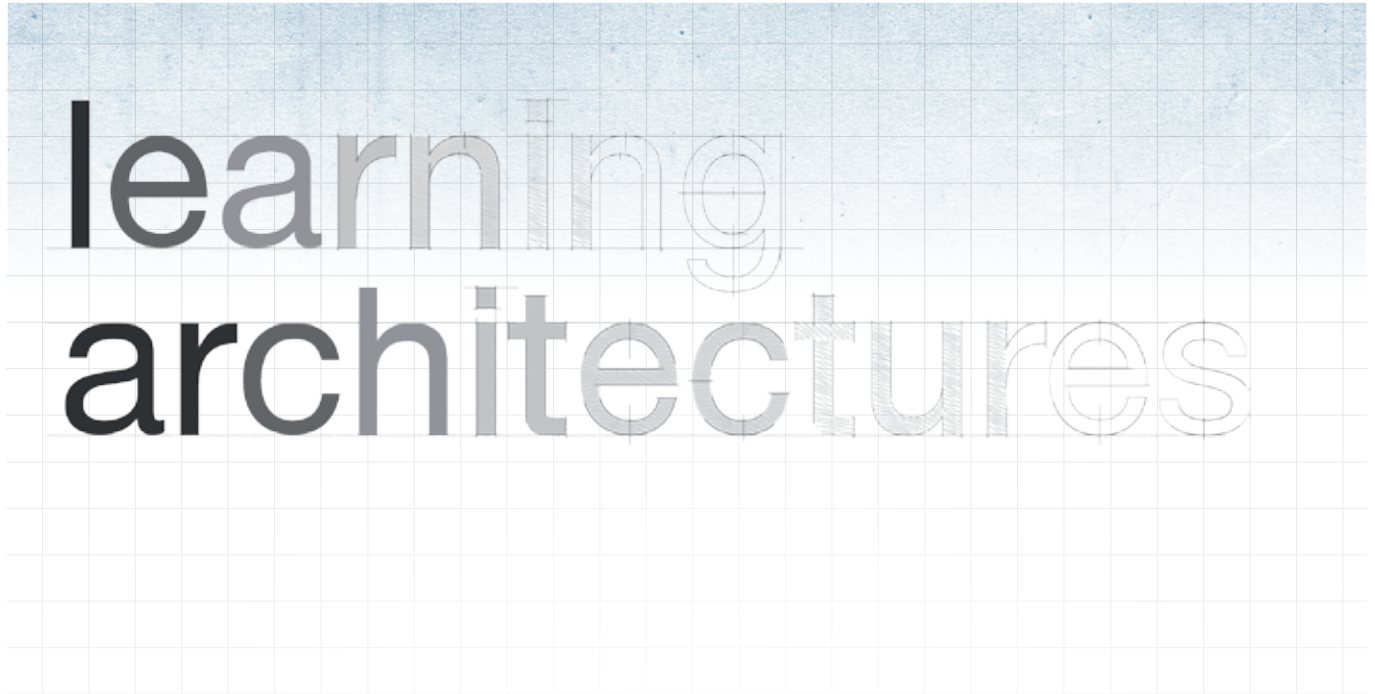


Building the Foundations of a Learning Architecture

Authors: Piers Lea, Andrew Joly, Steve Barden, John Helmer



'Traditional' training is not good enough. High-performing organisations are adopting a different model for 21st Century learning informed by 70/20/10 and the possibilities of informal learning, as enabled by technology innovation. The Key to making a success of this new model is thinking architecturally about learning. Andrew Joly, Steve Barden and John Helmer of LINE Communications survey the roots of this shift, discuss its impact on the learning and development function, and lay out a framework for understanding and working with this new architectural approach to programmes and strategy.

LINE
learning & communications

With a foreword by
Clive Shepherd, Onlignment



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Ideas and some material in this white paper have previously appeared in e.learning age magazine and on the headLINE blog (www.line.co.uk/headline).

Foreword: architects for learning

By Clive Shepherd, Onlignment

Architects as we usually know them

An architect is someone who creates the plans from which others build.

An architect of buildings designs environments for living. Only rarely will they be designing an environment in which they themselves will be living. More typically, they will be responding to a very specific brief that reflects very particular requirements. Before they put pen to paper, the architect simply has to know the following:

- What type of building is required – a home, an office, a factory, a school, a hospital? What functions must this building perform?
- How many people will be using this building? What activities will they be carrying out? What are these people like?
- What constraints are placed on the design of the building in terms of budget, time, quality, regulations?

The architect of buildings has a professional responsibility to their client. They are expected to be up-to-date in terms of current materials and methods and the latest developments within science and engineering as they relate to construction. They use this knowledge to provide their client with a building that will be safe, durable, maintainable and efficient, while meeting the requirements of the brief within the given constraints. They could be swayed by other motives – their own desire to experiment and innovate, allegiances to current fashions and philosophies, perhaps the prospect of winning an award – but if they do, they risk compromising on their duty to their client.

Meet the learning architect

A learning architect designs environments for learning. Like the architect who designs buildings, the learning architect will be responding to a specific brief:

- What is the nature of the learning requirement? What knowledge, skills and attitudes is the employer (the client) wishing to engender in the employees working within the business, division or department in question? How will this learning contribute to effective performance?
- What jobs are carried out in the target area? How many people are doing these jobs? What are these people like in terms of their demographics, prior learning, ability to learn independently, their motivation and preferences?
- Under what constraints must this learning take place? How geographically dispersed is the population? How much time and money is available? What equipment and facilities can be deployed to support the learning?

The learning architect also has a professional responsibility to their client. This requires them to be fully conversant with current thinking in terms of learning methods, acquainted with the latest learning media and up-to-date with developments in the science of learning. As none of these is intuitive and obvious, the client cannot be expected to have this expertise. And for this reason, it is neither sufficient nor excusable for the learning architect to act as order taker.

The responsibility of the learning architect is to their client. As with the architect of buildings, other motives can come into play – the desire to experiment and innovate, loyalty to the latest fads and fashions, the glamour and glitz of the awards ceremonies – but should they be tempted, they risk failing to meet the requirement within the given constraints.

'Architect' might sound like a grand title for someone other than a head of learning and development or, what the Americans like to call, a Chief Learning Officer, but remember that architects of buildings tackle small jobs like extensions as well as office blocks and whole housing estates. They start off working with other architects and they gain experience over time.

You don't become a learning architect by calling yourself one; you also have to behave like one. An architect of buildings does not carry the bricks or paint the walls, although they do keep a watchful eye on these activities in case their plans need to be revised or updated. They don't have to supervise every activity, but they do need to watch the numbers, so they can react if budgets and timeframes are being exceeded.

The learning architect does not need to directly facilitate learning or be present in all those situations in which learning might be taking place. However, they must know whether or not the learning that is occurring is in line with their plans and their client's requirements, and that all this is happening at an acceptable speed and cost. And because the only constant in the modern workplace is change, they must be agile enough to respond to shifting requirements, new pressures and emerging opportunities.

Clive is an independent learning and development consultant. His latest book, *The New Learning Architect* was released in January 2011 and is available in paperback and for all major e-book readers.

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1. Why this paper now?

Introduction by Piers Lea, CEO LINE Communications

We are seeing a shift in the way people approach learning and communications within organisations. It is a shift that stems, as I see it, from the world in which we work becoming faster and more complex. Everything is more complex. Everything is expected faster.

We are seeing this shift, at LINE, across a wide range of the sectors in which we work.

1. **Automotive/Manufacturing.** Asian economies now copy western innovations in a fraction of the time it used to take them. In the view of Volvo Trucks, this time has been cut from two years to six months.
2. **Finance.** Banks are required to understand the complex world in which they operate – at speed – and to manage fundamental change in the knowledge and skills of their global workforces at a scale equal to the challenge. How is it possible to really get their people to understand ever more complex regulation and technology, against the background of a world where multi-billion global trading takes place in nano-seconds?
3. **Professional services.** The ‘Big Four’ consulting firms have acknowledged that today’s auditors, for example, could be trained all day every day and still not know everything they need to know. Those auditors, and many other categories of workers, increasingly need access to learning at the point of need.
4. **Defence.** The world’s defence organisations are now having to fight completely different types of battles – facing all manner of new threats from EIDs to ‘cyberwars’ – at the same time as dealing with massive budget cuts. So how do you retrain from ‘command and control’ to ‘specialist problem solvers’ at high speed?
5. **Government.** All departments across most western governments are subject to cuts. That means remaining workers needing to cover more roles in an environment of exponentially increasing policy and legislation.
6. **Any business** now needs to use technology well to be competitive. Technology is both driving and enabling the ability for globalisation

Manufacturing, banking, accounting, defence, government, as well as all SMEs and most consumers, are now saying that the old models for learning are no longer adequate.

So what do they need from learning?

I would say two main things:

1. Efficiency – reduced-time competence, learning compression
2. Effectiveness – people who have learned and can go on to learn the next thing to the right level of quality

(NB: we often see ‘over-training’ which is almost as bad, commercially speaking, as lack of training)

To achieve this goal, everyone needs to acknowledge that the nature of learning has changed – and will change more in the years to come.

The complexity of our world means you cannot retain your knowledge in the way you used to.¹ You just need to know how to learn fast and be provided with the right route to get it quickly and easily. This means acknowledging that ‘training’ is not a one-off event. It is a sustained activity that flexes according to your personal and organisational need. In this way, organisations need to help their own people be ‘fit’ for our new, and highly competitive, world.

This is where learning architectures come in. The well-designed architecture will achieve the optimum (i.e. the most effective) result for the least (i.e. the most efficient) cost.

And in the end, that’s all anyone is asking for.

That’s why we see the shift to a learning architectures approach as the most important trend currently affecting the learning and communications landscape – and why we are keen to support and inform its development.

¹ In his book *How to be a star at work* (Three Rivers Press, 1999) Robert Kelley describes a study to analyze how much information the average knowledge worker could retain when doing his or her job. It was found that the amount decreased from 75 percent in 1986 to between 8 percent and 10 percent in 2006.

2. Introducing learning architectures

Clive Shepherd's concept of the learning architect, as outlined in his forward to this paper, points to a significant change in the way many learning and development professionals are going about responding to the challenges thrown at them by the current business environment and the opportunities provided by new technologies and innovations in learning.

In our work with clients, we have seen the same change, which is the focus of this paper. However, we intend to tackle the theme here from a slightly different angle. This paper will examine the change from the point of view of design and strategy; how successful learning programmes and strategies are being shaped now in response to the drivers, threats and opportunities of our networked, always-on world.

We'll be talking about learning architects, certainly, but more about **learning architectures**.

We believe that the ability and the propensity to think architecturally about learning represents a significant shift in the way it is being conceptualised and planned within organisations. We have observed this shift in action. In this paper we seek to describe something of the nature of that shift, to document why and how we think it has happened, and to lay some of the foundations for a best practice approach to organisational learning based on this new type of thinking.

What is a learning architecture?

Put simply, a learning architecture is a design for learning to meet a particular business goal in a particular situation.

It's good to have a simple definition. But the simplicity of this definition perhaps underplays the complexity that learning and development professionals have to deal with in today's networked world of multi-channel, multimedia communications and changed learner expectations; faced with a plethora of learning tools and modalities both old and new, and with no clear rules or established practice to indicate how best to combine them.

Bersin Associates, the well-respected US learning consultancy, offers a definition of learning architectures on its website that, to a degree, acknowledges this complexity:

“A “learning architecture” is an organization's unique map of agreed-upon learning needs, learning strategies and delivery strategies for all of its training. This gives designers, trainers and managers a clear view of what types of problems the organization will solve, how they will solve them, what tools they need and which approaches the organization will take. It deliberately limits the organization's options by deciding how and where the training organization will focus its efforts – and it builds upon the organization's culture and history of learning.”²

However, Bersin Associates are talking here about a strategy that covers **all** of an organisation's training. Our own definition is broader, and covers strategic design at the programme level as well. In fact we believe that an architectural approach can be taken to learning at all levels (see Chapter 3: Architectures and Learning Strategy for an extended discussion of this point). Not only **can** be taken but **has** to be taken, if we are to rise to the challenges of modern business.

Roots of the concept

The idea of learning architectures is not a new one. Bersin & Associates showed a series of fascinating and varied architectural case studies back in 2008.

Neither is the notion of learning strategists as architects entirely new: learning designers have long been aware that they have a good deal in common with **information architects**, the people who design and structure web experiences; sharing very similar skill-sets and conceptual underpinnings. It is an idea that is gaining momentum, however.

² <http://www.bersin.com/Lexicon/Details.aspx?id=12877>

Clive Shepherd's book explores the metaphor of learning designer as architect (Shepherd, 2011)³. He uses this analogy as a way of describing how the role of L&D professionals is changing. An architect, he says, responds to a particular need and set of circumstances: what type of building is needed; who comes to it, and what are the activities that take place there; what are the physical constraints on building?

The important conceptual shift that comes with thinking in this way is from visualising a learning programme as a sort of obstacle course you put trainees through, to visioning it as a structure you build that learners then inhabit. There are still goals and pre-defined paths within this structure: VIP visitors to a corporate headquarters, for instance, will find that the architect has designed a carefully considered route that takes them from reception to the boardroom - but other types of visitors will move through the building in different ways; and all visitors, to varying degrees, will exercise autonomy and free choice in exactly how they use and experience it.

Just as an architect designing a building – or, to shift the example into the virtual realm, an information architect designing a website – thinks about user journeys and user experience, a learning architect will think in terms of learner journeys and the learner's experience. And, just as buildings and rooms need to be flexible, so should learning architectures allow creative flexibility for real people to use what is designed in different ways.

There is a good deal of fear around this shift within the profession. If we're not leading our learners by the nose, are we really leading them at all in any real sense? Are we not just abandoning them to their own devices?

Yes, there is a notional loss of control involved in this shift, but only in the sense that a tour guide showing visitors around, say, the great pyramids has more direct control over the group than the original architect of that edifice. The tour guide can give you information, but it is the (probably in this case nameless) architect who shaped the experience, who inspires the sense of awe and wonder; who gives the journey its deep emotional charge and provides a truly memorable experience.

³ Shepherd, C. (2011). *The New Learning Architect*. London, UK: Onlignment.

How important is emotional charge in learning? Critical, it turns out. Recent thinking in the learning world⁴ has come to the view that emotion (uncomfortable as it might make some people to acknowledge that word in a business context) is not only helpful but probably essential for any sort of learning to take place.

The real point is that the loss of immediate control in embracing informal learning within the context of a learning architecture – in moving your role from tour guide to architect – brings an immense power possibility. Because there is massive potential contained in the integration of learning and, more importantly, the application of learning into everyday life.

Differences and similarities

So what does it look like, this new view of learning? Where can we see the plans, the blueprints? The simplest thing might be to show a particular learning architecture (see sidebar). It is really only by describing and showing the structure of an individual programme that you can see what we're really talking about. As Clive Shepherd points out in his book: 'each organisation is different ... [a learning architect has to meet] the particular learning requirement for the particular target audience, and in consideration of the practical constraints and opportunities'.

This particularity makes it slightly difficult to discuss learning architectures at a conceptual level. In the field of learning and development we are used to models based around the assumption that there is a **course**. Instructional design, with its military and behaviourist roots, gave principles that were useful in telling people how to structure courses. However, in a world where the course is losing ground as the default unit of instruction, these principles become of declining usefulness - especially when it comes to looking at programme design on the macro level. The natural tendency is to cast around for similar iron principles that will tell us how to design a learning architecture, but unfortunately none exist. We experience a 'model' gap.

⁴ Nick Shackleton-Jones give a very good explanation of the 'Affective Context' model, based on psychological research, and the implications it has for learning design on his blog at: <http://www.aconventional.com/2010/08/understanding-learning-affective.html>

So how is the learning architect to proceed, if Gagne, Bloom, et al are not going to provide the blueprint? Do we have to start with a blank sheet **every** time we look at a learning programme? And how will the next generation of learning architects be educated if no accepted principles can be put forward on which to base professional practice?

In this paper we have put forward some structural principles to guide programme design, but we are aware that this is an evolving practice. Given such a situation it is especially important to be attentive to what peer organisations are achieving and how they are getting results. Consequently, our approach to learning architectures has a strong component of benchmarking.

The importance of benchmarking

Perhaps it's worth considering, at this point, how architects learn and practice their profession. Certainly they have principles of construction and aesthetics to guide them, and a host of laws and regulations that stop them building anything dangerous, but a large part of their ongoing education involves closely studying what has been built before, the treasure-house of architecture, old and new, and working out for themselves what makes particular buildings so good (or so bad!).

This comparison prompts the thought that not all houses are completely different (my Victorian house is in many structural respects identical to thousands up and down the UK, in fact). This is not just a matter of social conformity: a similar problem (how can we live in comfort), posed in similar physical circumstances (geography, climate, culture), and given the availability of similar technologies (bricks and mortar, heating, electricity) will result in a similar solution.

Similarly, not all learning architectures are completely dissimilar.

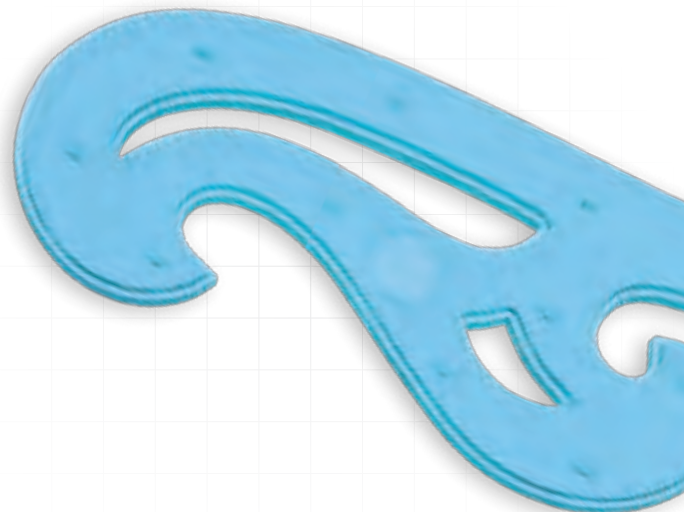
Learning architects don't have to start with a blank sheet of paper, but can be guided by studying what has already been done that has had successful outcomes in similar circumstances; benchmarking, in a word. Through benchmarking, both formal and informal, we discover not iron principles or models,

but a collection of patterns and forms that fit particular learning needs and sectors. The interesting thing about learning architectures is not how different they all are, but how similar.

If you're looking at induction for management consultants within the professional services sector, for instance – or dealer training within Automotive – you can be pretty sure that someone has grappled with the same problem before, and there may well be an architecture that is already known to work. You might have to tweak a few variables, based on the IT infrastructure constraints, learner profile, timescale and so on, to do with your particular situation, but you would have an architecture with which to compare and a benchmark with which to work – a place to start.

At LINE, where our benchmarking has been largely of the informal sort – i.e. observing what gets results in our work with clients, and striving to learn from emerging good practice – we have found that our ever-growing experience in architectural approaches – what works for different audiences, what's needed and how to work within different engineering constraints – is helping to short-cut strategic thinking for new clients and projects.

This architectural way of thinking about learning is the key, for us, to solving the problems posed by today's networked, globalised, ever-more-pressured business environment. It's a *modus operandi*, a way of thinking and working that we want to foster as widely as we can within our industry, because it's one that we know gets results.



Putting practice into theory

To return to our original definition, then; a learning architecture is a strategic design for learning to meet a particular business goal in a particular situation. While the specificity of the architecture that results, in its response to that individual goal and situation, is important, the architecture in question is unlikely to be completely unique. There are examples to follow. But it would be less than honest to gloss over the conceptual difficulties that exist in transitioning to this new view of the world. Even if you accept that learners can no longer be led by the nose through courses, but require more autonomy, and even if you have exemplars showing how this has been accomplished by other organisations in your position, there is still a lot of room for mistakes.

In the next two sections we suggest some structural principles that can be followed – the foundations, if you like, of a learning architecture - and discuss how these can be applied both to programmes and to learning strategy.

It is important to note that these principles have in large part been drawn from our observations of what works in practice. In the current situation – with the most energetic learning innovation happening within corporates, while academe struggles to keep up – theory inevitably tends to follow practice.

Example of a learning architecture: architecture for topic stream learning in a professional services environment

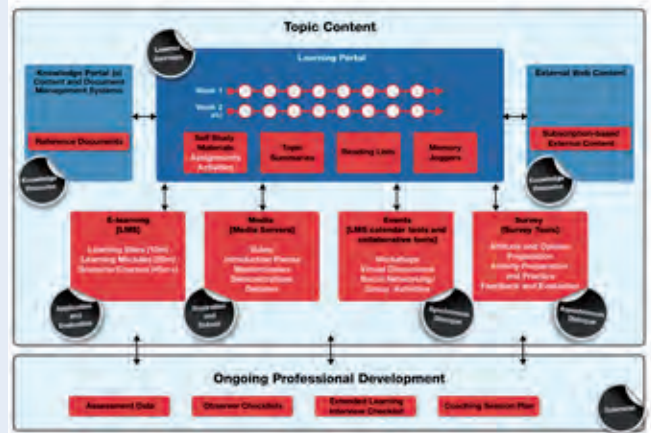
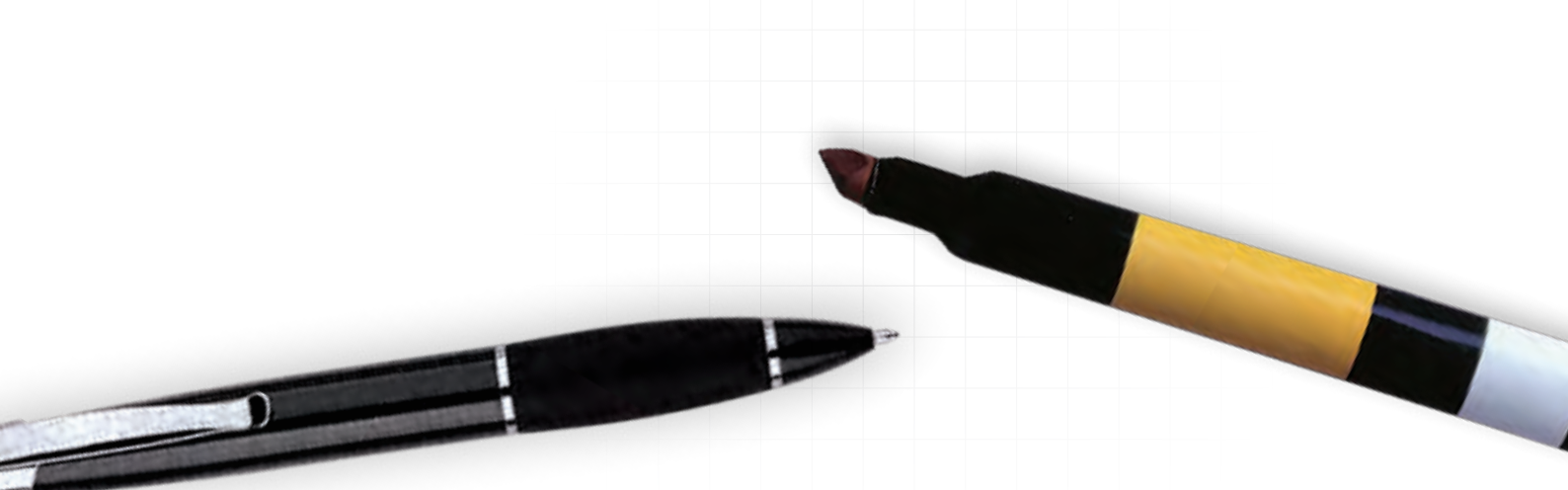


Fig 1

Each organisation and audience requires a specific approach relating to technical, cultural and social parameters as well as specific learning needs. Yet many of the core requirements are the same. In this case, topic stream learning for consultants within the professional services sector brings ‘traditional’ e-learning, events, media, social networking and collaboration tools into learning journeys created from both the informal and formal components available. Key parts of the learning programmes feed out of the topic streams into continued professional development programmes as an extension to the core learning design.



3. Foundations of learning architecture

An important underpinning principle of learning architectures is the 70/20/10 model. So widely has this model become known and used within L&D that, for the purposes of this section, we have assumed most people will know what it means. For an explanation of 70/20/10, however, together with a discussion of its importance, see Section 4.

The basis of LINE’s approach to learning architectures lies in a definition of the role of learning design in the 70/20/10 world that can be summed up thus:

Strongly support the 70% learning
 Develop and exploit the power of the 20%
 Design the 10% within the clear context of the other 90%

Moving beyond the 70/20/10 model, which we see as an **observation about how people learn**, rather than as a practical framework for action, we have defined three dimensions of learning provision that can start to be the basis of such a framework.

The three dimensions of learning

What does it actually mean to think about learning architecturally? Firstly, it implies something three-dimensional, and something that has structure.

In the absence of a course to give structure to the learner’s experience, the learning architect must work with three dimensions of learning (see diagram). Let us explain what each of these three dimensions involves.

X axis – Learning Content

On the ‘x’ axis, we place learning events that are essentially solitary; the learner interacting with content supplied to them. This would include expert-designed, asynchronous content, created to meet results-focused requirements, such as:

- Rapid Nuggets
- ‘Traditional’ e-learning
- Show-me/Try-me
- Scenarios
- Simulations
- Games
- Documents
- Assessment tools
- Quizzes/Profilers
- Video/Audio

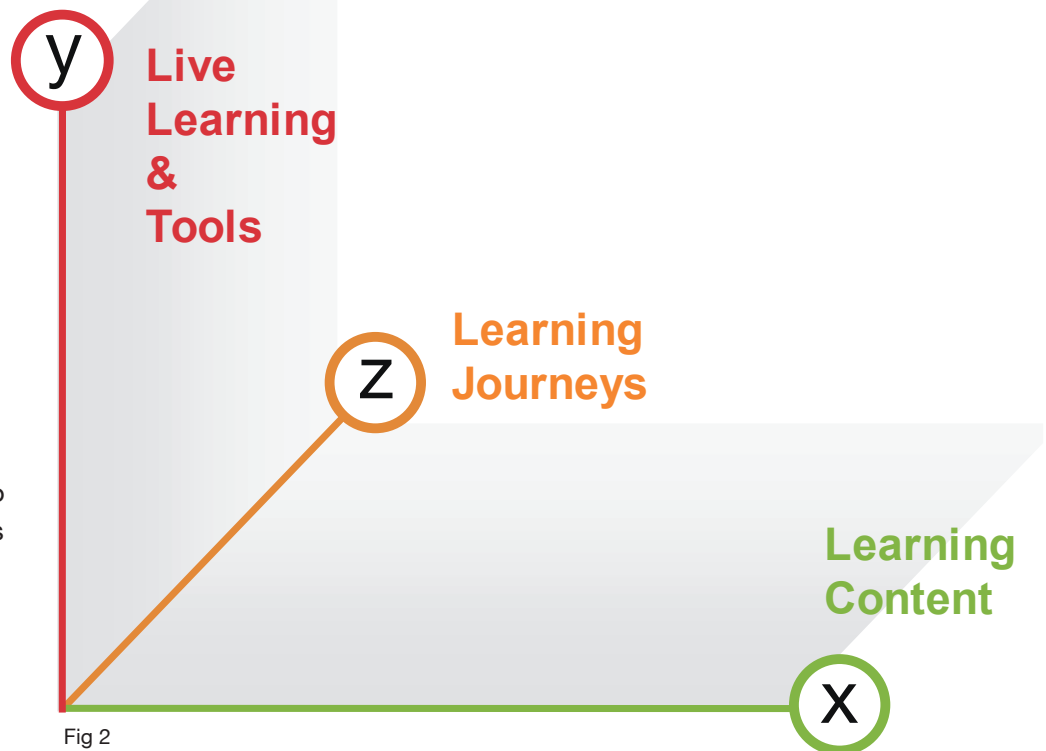


Fig 2

Y axis – Live Learning & Tools

On this axis, we enter a more ‘social’ domain. Here we find learners interacting with content together, or interacting with each other. Here we would place networked and informal knowledge systems that support person-to-person, applied, on-the-job, volatile learning and knowledge, including:

- Webinars
- Face-to-face and workshop learning
- Virtual classrooms
- Online meeting tools
- Email
- Forums
- Blogs
- Wikis
- Rating
- Social networking tools
- Voting and ranking tools

Z axis – Learning Journeys

The vital dimension: Without the activities on this

axis, informal learning can too easily be a rag-bag of different, unassociated elements that do not provide a coherent learner experience. Here we find what brings these elements together to provide a direction and a narrative; through awareness, communications, refreshers, networks, and tools to drive learning to unconscious behaviour. These might include:

- Communications campaigns
- Awareness/teasers
- Champions and mentors
- Pre- and post-learning
- Formal learning
- Action learning groups
- Events and road shows
- Refreshers
- Top-ups

Within any given client situation, sector or knowledge domain, the particular way in which activities along these three dimensions are configured to produce a successful outcome is what characterises a particular Learning Architecture.

Having defined the three dimensions in which we are visualising our learning architecture, it is necessary now to talk now about the considerations involved in making the various activities join up and work together to make a coherent whole.

Getting the plumbing right

Anyone who has been involved in building work, even on a domestic scale (or anyone who has seen an episode of BBC’s Grand Designs, for that matter) will be aware that construction involves careful coordination of different trades. Plumbers have to provide water supply and wastes in the right place and at the right time for builders to put in kitchens and bathrooms, for instance. Electricians have to supply power in the right places for the appliances that heating engineers will install. Plasterers have to leave an appropriate finish for the decorators who will come later. You might have had the misfortune to be involved in a build where these different trades were not well coordinated, and to witness at first hand the delays, escalating costs and missed opportunities that result from badly coordinated and specified construction work. Let me tell you, as one who has been there, that it is a salutary experience!

How does this scenario relate to learning and development?

Well, designing a blended learning programme at scale in the second decade of the twenty-first century involves coordinating a diverse range of requirements that we could equate to the trades in our building example. You might develop a Learning Portal, for instance, where learners will go to access self-paced study materials and assignment activities, alongside a calendar of ‘synchronous’ events (both face-to-face and web-based) – that hand-holds them on a learning journey. At the same time you might want to provide subscription-based external web content, reference materials via a physical library or document management system, video masterclasses, modules of online learning, a facility for feedback and evaluation ... and so on (it’s a complicated world).

The people and technologies to fulfil each of these different requirements might come from a different source, either within or outside your organisation.

Fulfilling each of them will involve very different skill-sets, and procuring and deploying these resources as part of an overall plan may call on a wide range of different understandings and sensitivities from you, the learning architect. You will be mixing online and offline modes, synchronous and asynchronous, formal and informal, self-paced and collaborative – and maybe combining these with an internal marketing or awareness campaign.

Like the trades in our building example, these resources need to be sequenced and combined effectively if the result is not to be an incoherent mess.

‘Connectedness’ is the key

Clearly, project management is a key skill here, but design and planning no less so. Just as a good architect will have a detailed knowledge of the elements they are assembling in their design – down to choice of a certain floor tile, for instance, or knowledge of how a particular underfloor heating system works and the dependencies that might create within a building project, so the good learning architect knows their materials. The most crucial part of this architectural awareness is the connectedness of all the parts – a knowledge of what each element adds, but most importantly how it functions within the whole.

So what are the important areas that a learning architecture needs to have in place to make sure all our key requirements are covered? It’s time to drop the metaphors and get specific. There is a list of key structures or principles that we feel need to be at least considered in the development of a strategic architecture for learning. These are capabilities that enable effective learning strategies. They are called capabilities because what’s important about this list is that it is technology agnostic: it’s about the type of learner activity involved, rather than about whether or how it makes use of technology.

The technology is almost a side issue – a matter of logistics and engineering that we will look at in the next phase of work. It should also become quickly clear that there are tools and technologies that deliver many of these capabilities right now, but that is another subject.

Foundations of a Learning Architecture: 10 capabilities you need



Fig 3

Knowledge resources - Elements of content that provide ‘informational’ knowledge or reference. These may be accessed independently and **used directly** as part of the learner’s working life. The specific tools to deliver and share these will be relevant to their use cases, normally related to illustrative, ‘just-in-time’ and ‘just-enough’ modes of engagement. Tools need to allow collection, distribution and sharing of specific or general content: videocasts, podcasts, introduction pieces, masterclasses, demonstrations, filmed debates, case studies, evaluations, reviews. Resources are often documents and can also be links to external content – e.g. knowledge portal(s), content and document management systems, subscription-based content, user-generated and highly specific (just-for-me) content relating to on-the-job knowledge.

Learning resources - Elements of content that have a goal (however simple) of changing the applied behaviour of the learner. Their aim is to close a gap

(skills gap, performance gap) in some way. Appropriate systems will allow these to be delivered for both 'just-in-case' and 'just-in-time' use. Typified by learning nuggets, mobile learning applications, micro-gaming engagements, assessment and feedback systems.

Learner journeys – Ways of delivering more complex learner journeys; whether online, blended or wholly face-to-face. Made up of learning resources or other learning events, often combined with knowledge resources, and allowing for the usual effective design strategies to be employed (exploration, application, feedback etc.) These Learner Journeys are often coordinated or calendared; possibly via a learning portal or journey leader; often blended and often mixed, for multi-channel delivery - e.g. self-study materials, assignments, activities, topic summaries, reading lists, memory joggers.

Synchronous and asynchronous dialogue

synchronous - Communications channels as well as events e.g. workshops, virtual classrooms, live networking tools, group activities; tools supporting coaching and mentoring, sharing and support, webinars, help.

Asynchronous - Sharing/communications channels: forums, chat rooms, blogs, wiki's, surveys, email. Often used in a learning mix for attitude and opinion preparation, learner-activity preparation and practice, feedback and evaluation etc.

Communities - Allowing community creation, development and management; collaboration and sharing amongst formal and informal groups. Often using social network and personal profiling tools.

Reflection & reinforcement - Anything that is used to meaningfully encourage revisiting, checking, assessing or reflecting on learning (often over time) i.e. survey, assessment, one-to-one performance sessions, mentoring or coaching.

Application and exploration - Systems that enable any virtual application or exploration of skills as part of the learning mix – e.g. workshops, serious games, scenario-based learning, on-the-job/integrated learning programmes. These are often provided as part of a Learning Resource or Journey system but should be considered separately as a capability as there may

be other ways of delivering powerful results through deeply engaging application of learning.

Internal Communications - Effective systems for delivering global or specific communications and awareness campaigns; multi channel, front-of-mind approaches to attitude; internal marketing campaigns.

Evaluation - Collection, compilation, presentation and feedback of both learner evaluation and, critically, programme and learning system evaluation (the subject of a much wider discussion!).

Extension - Systems that encourage close integration of learning with an organisation's personal and professional development and management structures and behaviours - the critical link to organisation management, people and skills management and HR.

Remember – this is not (yet) an architecture in itself, it is more like a checklist of essential trades: a place to begin in the design of a structured programme to meet whatever business and learning objectives you are working with as a learning architect. Without these clear capabilities in place, and the systems and resources to deliver them, we don't think your structure is going to be designed with current best practice in mind.

Built to last

We are in an area of emerging practice, and our plan is to continue to codify effective architectures for different sectors, groups of learners and learning challenges; working with clients, consultants and industry colleagues we will develop the patterns and models of what works best in practice.

4. Architectures and learning strategy

The foregoing will likely have left an important question in many minds. We talked about the capabilities that are needed within Learning & Development – the ‘building blocks’ of a Learning Architecture – but at what level of operation are we speaking here? Is it, at the level of the learning programme? Or are we talking about an organisation’s overall learning strategy?

The simple answer is, both. Thinking architecturally about learning is something so critical and fundamental that it should be done at an organisational level as well as when we plan any specific learning programme to develop knowledge, skills or behaviours.

However, this answer might seem confusing. Surely, there is quite a difference of scale between the two activities. While setting an overall organisational strategy will include looking at many different technologies and modalities (the macro level), designing a learning programme to fulfil a particular tactical objective might include far fewer (the micro level). It could just be a matter, in fact, of using one: a workshop rolled out to key learner populations perhaps, in the traditional model.

In addition, there is necessarily something at once more static and yet more enduring about a learning strategy. It looks at learning provision holistically; focusing on assets, capabilities, software products, resources; but also taking into account the characteristics of the learner population and its various segments. Programmes, on the other hand often deal with only a (relatively) small subset of that learner

population, and typically have more immediate drivers, less resource to play with and tighter time constraints.

So how can the same learning architecture principles apply at both levels? How can one model fit both modes of operation?

Formal or informal, structured or unstructured?

Think about it this way. Let’s return to our image of the different capabilities you need as ‘building blocks’ for a complete architecture: it is the over-arching learning strategy that will define the precise set of building blocks L&D will have at its disposal out of which it can build learning programmes. Clearly this puts pressure on whoever creates the strategy to get it right, because the design of all learning programmes in that

organisation subsequently will be limited by the scope and constraints of that strategy. Whoever creates the strategy must think carefully about the type and variety of capabilities that will be called upon for designing learning programmes for their particular organisation - in a 70/20/10 world, with its mix of formal and informal interventions; with its blend of structured and unstructured learning solutions.

Potentially, all learning programmes are different. But they can be classified

in type according to how formally the learning objectives and goals are defined, and how structured the actual solution is in terms of its sequence or learning path. In reality, there will be different degrees of formality and structure in each element of a blended solution but for the purposes of illustration let’s use the four extremes.

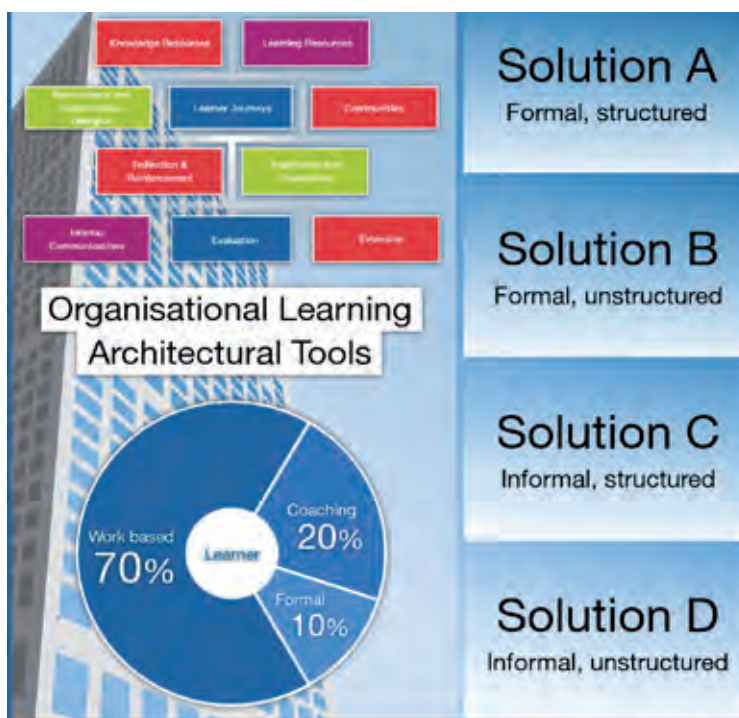


Fig 4

Fig 4. gives a diagrammatic representation of this situation, with the four prime types of programme architecture that can result:

- **Formal, structured** – where the instructor defines the timing, place, goals and objective as in a traditional, instructional solution and it follows a defined sequence of learning. (Jay Cross defines them as the authority-led approach typified by academic and training departments). In the 70/20/10 model this is strictly the ‘10’ and often applied where mandated learning is required.
- **Formal, unstructured** – again a traditional delivery approach but where the learning sequence is more freeform or determined by the learner (you could say those typified by more advanced academic, experiential learning systems). A move into the ‘20’ space with signposting and support but where a variety of paths can be followed.
- **Informal, structured** – where the learner is in control of the time, place or goals but follows predefined pathway(s) to achieve them. This may be in the ‘20’ or the ‘70’ and applies more typically where a specific job-related skill is being sought.
- **Informal, unstructured** – clearly the space occupied by social learning and will be alien except in the ‘70’ world of learning whilst working.

It follows from the above that every organisation will have a different strategic mix of capabilities, depending on the type of programmes they need to run. Learning architectures is definitely not a one-size-fits-all methodology. Within large and complex organisations the overall structure of learning provision must be flexible enough to cater for all points along this spectrum. Smaller organisations or those with a more homogenous workforce may have a narrower set of building blocks.

It is also interesting to note how different this world is from traditional training where, broadly speaking, the huge majority of learning needs were met with just one basic capability – face-to-face classroom training.

Learner journeys

Now that we have defined the relationship between strategic-level and programme-level design with regards to our building blocks, or capabilities, it is necessary to say a little about Learner Journeys, which is another important part of the architectural toolkit. Learner Journeys are what bring the different capabilities together, providing the structure; if you like; it’s about organising this range of diverse modalities and technologies into a coherent whole to meet a particular learning objective.

This is fairly straightforward to imagine at the programme level of operation. It can be easily grasped that the learner journey is the time-based dimension of learning design; the experience we want the learner to have, the clear steps towards the destination we want them to arrive at where they will have required a particular competency, attitude or awareness.

However, learner journeys also operates as a concept at the strategic level. Here it involves taking a strategic view of the employee’s life and progress within the organisation, right through from induction to succession planning. Along the way, the employee will encounter many facets of the organisation’s Learning Architecture (using that term in its strategic sense) which could include professional development, performance improvement, technical and skills training – but also training interventions where the employee takes an active part as a resource within learning provision, such as mentoring. You could call this, if you like, a meta-journey – the through-life journey the learner is on during their time within the organisation, of which Learner Journeys at the programme level form constituent parts.

A good, consistently managed and designed Learning Architecture might therefore be said to be ‘fractal’ in character – i.e. at what ever level of granularity you look at it, micro or macro, it has something of a similar shape.



Blended learning by another name?

It is at the strategic level that it becomes most clear that thinking architecturally about learning is not just blended learning by another name.

In a sense, yes, learning architectures is a more sophisticated form of blended learning. Both are multi-modal, and address a diverse universe of learning delivery platforms. However, blended learning as an approach tends to be tactical and programme-driven. Conceptually, it is about adding technology into an existing mix, rather than starting from a place where all methods and modalities – offline and online, synchronous and asynchronous, formal and informal, structured and unstructured – are all (in theory, at least) equally available. (For more on this, see Section 4: Beyond blended learning) You need more than the concept of a blend driven by instructional design to tackle business issues in today's organisations at the scale they present themselves. You need architecture. And you need architects.

Training the trainer

One further area that needs to be touched on in talking about learning strategy with regards to learning architectures – even if there is not enough space here to do it anything like full justice – is that of the skills and capabilities of the learning and development department, and in particular learning designers, need to evolve to embrace those of the learning architect.

This is clearly a strategic issue. Leading and managing learning in the 21st Century involves a lot of specialised new understandings. The administration of learning, for instance, involves understanding of the LMS market, and standards such as SCORM. Online learning delivery is increasingly going multi-platform, necessitating understanding of mobile technologies and different device form-factors. The field of learning design is moving really rapidly to keep up with the new possibilities available. And there are some quite specialised skill-sets developing around activities such as facilitating a virtual classroom session.

Clearly, the teams that manage learning now need different skills and knowledge from those of twenty years ago. And new skills and understandings are also needed by those who lead these teams – the learning architects, as Clive Shepherd refers to them.

What are the skills-sets, and capabilities needed to be an effective learning architect? We can't give a quick answer here, but it is obviously a critical question, since these skill-sets – as provided for in an organisation-wide learning strategy – are what ultimately will produce the programmes. And it is the programmes, created according to robust and replicable learning architectures that will produce sustainable business results.

5. The shift to thinking architecturally

The position we have taken in this paper is that thinking architecturally about learning represents a paradigm shift that takes us to a new world, very different from the old world of traditional, course-based training.

Such shifts do not happen easily, nor do they happen overnight. The change presents conceptual, cultural and logistic difficulties for those wishing to make the change in their own thought and practice, and needing to take their organisations with them.

Therefore, having laid down some theoretical guidelines, we will devote the rest of this paper to a discussion of some of the issues involved in making the shift, beginning with its origins in **informal learning** and the **70/20/10** model.

70/20/10 and the move to informal

Over the last decade, there has been a ferment of debate and discussion about what learning should look like in the 21st Century. Much of the energy in that debate, sparked by the emergence of e-learning, has gone into questioning the academic and theoretical underpinnings of instructional techniques, and incorporating new insights from the field of brain science. This focus on design has surely led to a quality improvement in the effectiveness of online learning at least. However, at a higher level of granularity, there has also been a growing interest in the role of informal learning, and a sense that rooting our enquiry too narrowly in how best to structure self-paced online courses risks overlooking the greater value that technology innovation can bring to the business of educating and developing people, looked at in the round.

70/20/10 (see sidebar) has been a critical concept within this growing awareness, and one that has helped to widen the focus of the e-learning industry. It has accompanied – and is in some senses perhaps symptomatic of – a wider social change going on in organisations.

One aspect of this change is that employees can no longer be assumed to learn from their bosses in the same way they once did. Often, in fact, it is the other way round; as with the phenomenon of ‘reverse mentoring’, where a top executive will be buddied up with a recent graduate to learn some new online skills. This wider change has been accompanied within training by a move from a purely transactional approach towards something more transformational.

Transformation has meant learning new skills for many in L&D: learning professionals find that they have to become experts in motivating and incentivising learners, and to find ways of protecting learners’ time to explore and learn informally. For some in the learning community, however, certain of these skills seem not so new. Replying to a post on our HeadLINE blog, Chris Lewis-Cooper related 70/20/10 to, ‘the Listening/Watching/Doing continuum that every teacher learns with mother’s milk’. Our own Steve Ash pointed out in a recent blog post that, “Sitting with Nellie’ elements of organisational learning were covered when I was doing my CIPD exams over 15 years ago, and the concept wasn’t new then”.

Where some see continuity and connection with the past however, others want more of a root and branch change. 70/20/10 has served as a rallying call – even a battlecry – for those who would like to tear down the edifice of organisational training; in the inimitable words of Jay Cross, ‘kill the courses, shut down the training department’. We hear, anecdotally, that 70/20/10 has been used as a rationale for cutting budgets, on the basis, presumably, that if the formal, budgeted part of learning is only 10% of the result, then surely it doesn’t need such large resources. It holds out the spectre, which has always been there in e-learning, of **disintermediation**. If 90% of learning is informal, and learners do it for themselves, then for what do we need L&D?

Whether or not this sort of talk strikes real fear into the hearts of training managers, it is certainly true that even those practitioners who are willing to embrace change have, perhaps unsurprisingly, experienced a degree of confusion about what (if any) should be their role in this new world of informal learning.

Opportunity or threat?

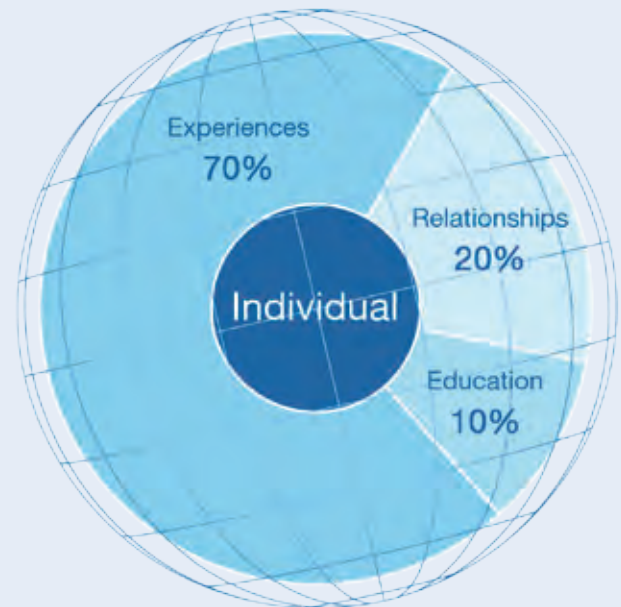
We are at a moment in the evolving practice of learning where there is huge opportunity; opportunity, but also for many in our business, uncertainty and fear.

Firstly, let us outline the opportunity. The 70/20/10 view has been with us since the early eighties, but it is only now, with the emergence of Web 2.0 technology tools, new paradigms of knowledge management and the self-directed learner, that we have begun seriously to harness the power of the 'informal' ways that people learn. No longer do we need to interrupt people's working lives with training days that take them away from their place of work before we can even begin giving them the knowledge and skills they need to do their jobs. Learning can, at last, be much more closely integrated with workflow. Learners can have more autonomy in when and how they learn. The whole thing can work not just more efficiently, but potentially far more effectively than ever before.

But fear also arises from the word 'informal'. It sounds and feels like a loss of control. We have grown up with a highly directive model of training, and feel instinctively that to lessen our degree of control over the learning experience may be to open ourselves up to too great a risk of failure.

As a result, that first step into the world of 'Informal' can feel like stepping off a cliff.

What is 70/20/10?



The work of McCall, Eichinger and Lombard in identifying the so-called 70/20/10 model has been critical in spreading awareness of the importance of informal learning.

The term 70/20/10 arises from the observation that 70% of learning and development takes place from real-life and on-the-job experiences, tasks, and problem solving; 20% of the time development comes from relationships with other people through informal or formal feedback, mentoring, or coaching; while 10% of learning and development comes from formal training or education.

Stepping off a cliff?

The problem with the traditional model of training is that it tends to place great emphasis on formal training events, while giving little thought to what happens between those events. In the 70/20/10 world, what happens between one event and another is at least as important, if not more important, than what takes place during the formal interventions that L&D mediates directly.

Three problems arise from this.

In the first place, many of the principles of instructional design elaborated and codified by traditional instructional theorists do not offer appropriate guidance. They can tell us how to design instructional events, but they don't tell us how to make them work together with more informal interventions within a learner journey where much of what happens is self-directed by the learner.

The second problem is the pure complexity of what has to be managed, when you admit into your frame of reference multi-channel and multimedia delivery of every type of learning, knowledge and communications, and indeed every type of behavioural change, that business requires us to address. The world you step into can seem very daunting – especially without familiar handrails to guide you.

Thirdly, this being a relatively new area of thinking, it often feels like there are very little in the way of readily-accessible best practice examples – proven, tested or otherwise – for us to draw on as we attempt to make sense of these new opportunities.

Despite these difficulties, there is a widespread recognition in the marketplace that using learning technologies is absolutely essential in order to meet the needs of today's globalised organisations, and that simply replacing one exclusively top-down model of training with an online equivalent is not necessarily the way to get the best results. An effective learning programme needs to cover all the bases; with an optimal design of the combination of people, processes, content and technology.

Clearly, in this world, it is no longer useful to think purely at the level of the course. The *lingua franca* of learning nowadays is the blend – but even this level of granularity is too fine: blended learning as currently practiced tends too often to be about sequencing instructional events (such as workshops, online e-learning modules and offline activities) that in themselves have a rigid internal structure – and often without much sense of what happens in between the events. Even thinking at the level of the programme is not going to guarantee success, if we remain in a firmly directive mindset. We have to think strategically, and architecturally.

Beyond blended learning

The argument for an architectural view of learning, as we have said above, can be attacked as a fancy way of dressing up blended learning. However, for us there is a clear difference; a step change in thinking that comes from taking 70/20/10 and informal learning into one's world view. After all, what exactly is being 'blended' in most blended learning programmes? The honest answer would usually be that it is a blend of delivery methods. But a design ethics that focuses on delivery methods is unlikely to be seeing things from the learner's point of view, which is such an essential perspective in creating a learning architecture.

Seeing things from the learner's point of view is, we believe, integral to good learning design, and will necessarily involve taking the informal part of learning into consideration. Learning is not just 'delivered', it is also sought out, accessed and shared - so if our sole design focus is on delivery, we risk missing a whole bag of tricks.

A further point to make about blended learning is that it too easily focuses on how we chain formal training interventions together, putting a heavy emphasis on the 10% to the exclusion of the 20% and the 70%. An architectural view of learning helps us to transition away from too exclusive a focus on the 10% of formal learning events.

Taking the first steps

It has to be acknowledged that the shift we are talking about is not an easy one to make. There is a case to be made, in the short to medium term, for focusing on what seem like closer, more achievable goals on the way to a completely 70/20/10 approach. Since many organisations are in exactly this place right now – transitioning from a traditional, formal model of training to some thing new and unfamiliar – it is worth exploring the virtues of such an intermediate, tactical approach. One we often recommend is 'Focusing on the Twenty'.

Why you should focus on the 20%

LINE's recent experience with client projects suggests that it is the often-overlooked 'Twenty' within the 70/20/10 model – the area of communication and relationships – which is the key to change for L&D. Embracing the domain of the Twenty brings us immediately into contact with the learning culture of our organisation, and culture is important. It is only by carefully considering and addressing learning culture, and the attitudes to learning embedded within that culture, that we stand a chance of bringing about the type of change we are talking about in this paper.

Get the Ten right, get the Seventy right, but nothing will happen until you get the Twenty right – so this is the logical place to start.

Clearly it would be foolish for an L&D department to neglect the Seventy in planning a campaign of any scale – and almost suicidal to lose focus on the Ten, where most conventional training interventions sit. But, in our view, there is a clear case for looking very closely at the Twenty if you want to bring about significant behavioural and attitudinal change to learning in your organisation.

Here are five reasons why, with a few supporting examples.

Reason 1: It's all about change

For most of our learners the Seventy (on the job experiences, social media, live learning tools and the rest) is a new world. While the younger workforce might see no problem with Seventy-style initiatives, the majority of large organisations have highly age-diverse profiles, and are liable to struggle to make such initiatives work easily at scale.

The massive changes required in the behaviour of individuals, from push to pull, from courses to resources, from the awayday to always-on performance support, start with changes in attitude. Changes of this kind will almost certainly have to happen from the top down; in the culture of the organisation or team, and through the most powerful change tool we have: relationship, conversation and human interaction.

Reason 2: It's about hearts and minds

The main battle in L&D is getting people to care enough about something to make them want to learn about it – a point that came up earlier in this paper when we referenced Nick Shackleton-Jones's blog. We are all social beings. A video, an e-learning module or a PowerPoint might supply us with good reasons to care about a given subject – and might even provide an emotional experience – but if the people we work with are uninvolved with the issues and messages put across – if they don't really care whether our day-to-day working habits change as a result – then the primary opportunity for reinforcement has been missed.

The social dimension (the 20%) is vital in changing the way people think and feel.

Reason 3: it's close to home for L&D

Coaching and mentoring, which sit squarely within the Twenty category, are core activities within the traditional training canon. In fact, many of the activities that fall here are familiar to L&D departments: so there's no massive technology or delivery hurdle to get over.

It's a relatively short step, therefore, to start spreading those behaviours throughout the organisation.

Recently LINE has been working with BA on one of their leadership programmes. BA had realised that one of the keys to effective behavioural change in the leadership area is support, mentoring and continued discussion with managers before and after leadership workshops. So, not only do they ensure that all of their leaders have undertaken coaching training, but they are developing a short, blended programme for the candidates' managers – to ensure their managers support them as they learn, change and apply their knowledge.

Reason 4: It's doable within the existing structure of organisations

Most organisations – even innovative, forward-thinking organisations – are structured in quite hierarchical ways. Activities in the Twenty category, such as coaching and mentoring, that rely on a ‘cascade’ of knowledge and behaviours down an organisation, can leverage this structural feature of businesses to bring about widespread change.

A major learning programme that LINE worked on with Ford relied on a carefully managed cascade of communication, knowledge, awareness and change throughout the European sales team, starting from the top and proceeding downwards through regional sales directors, finally reaching all European sales operatives. Without the snowball of energy and passion behind it, this programme may have gone the way of so many other 70/10 initiatives. Instead it was a great success, leading to more than two more vehicles sold per head, per year.

Reason 5: It works

Our chief reason for recommending a focus on the Twenty is that having worked on a number of programmes with clients that do this, we know it can succeed.

Results aside, it is also pretty much common sense. Look carefully at any successful blended learning programme, or indeed any major learning initiative, blended or otherwise, and you'll find motivated, engaged, inquisitive learners. How did they get to be in that frame of mind? Not because they stumbled across the programme accidentally, or because they received a badly constructed email invitation. In all probability it was communicated to them through line management and their personal contacts in the workplace: they heard about it, they talked about it – and they will continue talking about it.

Where is the proof that it works?

70/20/10 has become a much-banded-around term within large organisations – almost a mantra in some quarters. But does it provide enough structure and guidance on which to base a learning architecture?

People in L&D are becoming more and more conscious that the mere reciting of three numbers is not going to act as an ‘open sesame’ to a new world of learning. They need structure, they need practical advice. At a very fundamental level they need to know where best to target their efforts to bring about real change in learning behaviours within their organisations.

Many within L&D who are otherwise willing to embrace this change, but who are uncertain of what the implications are, have experienced confusion about their role in this new world of informal learning. Part of the problem is a perception that, while cheerleading for informal learning and the use of technology in supporting it, the guru community and the supplier market have not yet done enough to put meat on the conceptual bones when it comes to how L&D roles and practice should change and adapt.

This climate of concern was reflected a few years back by some of the speakers in Epic's ongoing debate about informal learning: "We have no 'North Star' when it comes to informal learning ... no common understanding" complained Nancy Lewis; "... Until we have templates, until we have frameworks, until we have proof, informal learning will remain more style than substance".

Templates, frameworks, proof: it's a not an unreasonable wish list. So do they exist, these things – and if so, where are they to be found?

Let's start at the back end of that list, with proof. It has been complained that a lot of the work being done within organisations, and the successes being achieved, remain below the public radar and tend not to be aired for reasons of commercial and competitive sensitivity. At the 2010 ELIG Annual General Meeting, András Szcs, Secretary General at EDEN, described the frustration experienced by many academics in the field of technology-supported learning at this state of affairs. While they are aware that much of the most innovative, successful and well-funded work in the field is being done within corporates, they have very limited visibility of it – and so are unable to study it, to pass on its lessons; to prove that it has validity.

The scene is not one of total darkness however.

A significant beacon in the landscape is the benchmarking research published periodically by Towards Maturity⁵. This internationally recognised longitudinal study based on the inputs of more than 1,200 organisations and 3,000 learners over eight years gives empirical data about the uptake and adoption of the kind of new learning approaches we have talked about in this paper, but also shows their correlation with improved results.

Incorporating informal approaches, catering for self-directed learners, using a wider range of learning technologies and delivery modalities and approaching learning in a strategic way – all of these characteristics, which are aspects of an architectural approach, are found by Towards Maturity to be attributes of top percentile organisations. These top percentile organisations, it is also found, are achieving much higher business benefits while using these methods. Compared with the bottom quartile, those organisations in the top quartile are achieving:

- Twice the audience take-up
- 33% additional cost saving
- 50% more savings in study time
- Six-fold increase in time to proven competency
- Six-fold improvement in productivity
- Seven-fold improvement in staff satisfaction

LINE, in its own way, has done its best to share as many of the positive results it has helped its clients achieve through our website, our HeadLINE blog, through case studies, articles and the forum events we run. Others in the supplier community also make such efforts. We are also actively involved in lobbying policy makers and business leaders to take note of the results that businesses are achieving through learning innovation⁶, important components of which are embracing informal learning and thinking architecturally (the two go hand in hand, as Towards Maturity's research proves).

So actually, if you look in the right places, the proof is there.

5 <http://www.towardsmaturity.org/>

6 <http://www.line.co.uk/press-release/listen-or-become-obsolete/>

Templates and frameworks

A template for learning that can work under all circumstances and for all possible audiences is a big ask. Probably it doesn't exist. One of the major problems with the traditional model of training – which is widely seen to be broken – is its inflexibility. It struggles to deal with the contemporary information landscape of always-on, interactive networked communications. The principles laid down by Bloom, Gagné, et al are found to conflict with what is often practical and necessary in such a world. Useful as they might have been in a world of courses and teacher/trainer-mediated learning, they provide little help in the realm of informal when dealing with the top level of programme and strategy design.

A pedagogy for learning architectures is therefore not really a relevant requirement. What remains of use from the established practice of instructional design will continue to be of use in structuring learning interventions of all types. When it comes to putting together these interventions as programmes and strategies, however – the stuff of learning architectures – we have suggested some top level principles here, and for more granular advice and models we would suggest benchmarking to be the most fruitful approach, in both its formal and informal aspects; drawing on the research work of bodies like Towards Maturity, and on observations from practice across a variety of organisations.

Central to this recommendation is a belief that while what works in learning varies a lot from sector to sector and from one knowledge domain to another – dealer training in automotive is a very different thing from corporate governance training for bankers, for instance – within those categories can be found 'templates' or (to use a more neutral term) 'patterns' that can lead to success.

Informed by these beliefs, it is our intention at LINE to work with clients, consultants, industry bodies and others to foster knowledge-sharing on the practical application of a learning architectures approach. We intend to hold workshops and issue further white papers on learning architectures, and invite practitioners in particular, the learning architects of tomorrow, to contribute to these initiatives.

If you want to hear more about how LINE can help your organisation to build effective learning architectures that deliver business results, why not get in touch?

Your next steps

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