Write Once, Build More, Deliver Many

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Abstract

The re-use and re-purposing of online materials is a 'motherhood and apple pie' concept - we all want to achieve it but it generally proves elusive. This paper describes the creation of an approach that aims to 'keep things simple' and allows materials to be easily-created, built into a variety of delivery processes (from simple, commercially-oriented, learning 'chunks' to fully-fledged educational courses) and delivered across a range of appropriate platforms (from vle to online store). The resulting approach is not revolutionary but it shows how current tools and platforms can be used to create a flexible, multi-use eLearning environment.The paper will describe the process by which this approach was developed, the tools adopted to make it a reality (many of which are open-source and freely-available) and how the concept was finally 'sold' to the management team. The paper will discuss the early outcomes of the resulting development and delivery project - letting you know whether it worked! Finally, some ideas for the future of 'high productivity eLearning development and delivery' - building on both the concept and the way it was brought to fruition - will be introduced.

Keywords: re-use, re-purposing, learning object, productivity

WRITE ONCE, BUILD MORE, DELIVER MANY

My background centres around education generally and productivity and technology specifically. I first became interested in eLearning because I like to see ways in which technology can be effectively deployed for financial or other benefit and because I wanted to explore the productivity of educational processes.

The re-use of learning materials is clearly a ‘good thing’; it reduces the need to ‘re-invent the wheel’ and should significantly reduce the resources required to create a new course. However, re-use is not common. Many (most?) teachers – especially in higher education - adopt some learning materials / resources (most commonly text books) but prefer to build their own support materials that suit their preferred form of delivery and support. Thus, materials designed specifically for teaching (or learning) that are ‘not invented here’ are not adopted.

We need to understand the reasons behind this reluctance to adopt materials before we can establish an appropriate strategy for storage and re-use.

The reluctance is understandable. The teaching process is a highly individual process built on inter-personal relationships; it is not surprising that teachers want to use materials that they have shaped and that reflect their approach and sensitivities. They feel – perhaps instinctively – that materials, however ‘good’, need this individual stamp. The text book is one step removed; it can be surrounded by other materials and activities.

This suggests that we need to either find a way to address these fears or to find a way to allow teachers to amend and personalise materials they adopt. This process of personalisation or customisation is now referred to as ‘re-purposing’ – modifying the content or design.

Almost everything written so far applies to learning materials of all kinds. When we move into the eLearning arena, there are some added complications. Most staff who are in a position to adopt eLearning materials are relatively new to the process of designing or delivering eLearning courses and/or materials. Often they are inadequately prepared, stumbling into

eLearning as an experiment or because they have been forced to do so. Many teachers in this situation associate elearning with elearning materials – they forget that, just as in face-to-face teaching, the learning (and the teaching) involves much more than the simple presentation of materials.

Once teachers understand that eLearning materials have to be 'wrapped' in activity and assessment, they often start to approach materials in a different light … and start to feel less 'precious' about those materials. What they do with and around those materials becomes the valuable part of the process … where the 'real learning' happens. Adopting materials becomes less of an issue.

The second way in which 'adoption' is eased is to work with established groups who already exhibit collaboration and mutual trust. So, within an institution, staff within a department may be willing to share materials with others, though they may be reluctant to share outside of that department. Clearly there may be logical reasons for this – it is obviously more likely that someone will adopt materials within the same general subject area – but often it is that 'trust' established between colleagues. This often extends to wider communities and networks, so repositories of leaning materials/objects may have a greater chance of success if they mirror such existing communities.

In our specific case – at Grimsby Institute – almost no sharing of eLearning materials took place. eLearning was in its infancy and the few pioneers worked as 'loners', experimenting in different ways. There were some visionary people who had taken the decision to adopt a standard vle platform (Moodle) and make the effort to integrate it with other college systems but there was little in the way of what could be called an eLearning 'strategy'.

I was asked by the Principal of the Institute to take a 'strategic look' at eLearning (having previously done so at another university) even though this was not my primary role at the Institute. I talked to some key people and observed what was going on 'on the ground'. There were pockets of good practice but much more uncertainty, apathy and ignorance. These are not things that can be changed overnight.

All books on change management suggest that a key to success is ownership of the change issue by senior managers and especially by one particular champion with authority who can share a vision for change. In Grimsby Institute, the key individual is the Principal – an entrepreneurial figure who seems to delight in change and reform. He thus became my 'target' – if I could get him 'on board' my task would be much easier. My observations to date suggested to me that he preferred relatively 'direct' approaches in which he could see end products and outcomes; he is much more likely to be influenced by a prototype or draft outcome than by a well-crafted strategy document.

My task therefore became to build a demonstrator or prototype that would show what I intended to complete in the longer term … and build it with enough detail to convince him (and others) that the approach would work. Since he is entrepreneurial, I thought it would help if there were both strategic, educational benefits and a commercial payback to the investment made. Since I wanted to build my prototype 'by stealth' (before anyone could stop me!), I had to (but was glad to) rely on open source or low cost software and services. The Institute already had a sophisticated implementation of Moodle so that was a major benefit, even though I had never personally used it. Moodle had something of a mixed reputation within the college (I had numerous reports and reviews which told me both how great it was and how inappropriate it was.) My first task therefore was to understand Moodle … and the way to do that is to build a course in it. So I did … and I found Moodle easy to learn and easy to use. It would clearly do the job we wanted it to do.
Remember, my background is in productivity. I started 'doodling' about educational processes, charting them using business process chart conventions and then set about seeing how far they could be abstracted and simplified.

One such simple process becomes …

1. Determine the objectives of a particular learning process
2. Identify or create learning materials
3. Design activities around those materials to aid understanding
4. Design assessments around those materials and activities to test knowledge and understanding
5. Design interactive delivery processes for those materials, activities and assessments
6. Design support processes for the students involved with these materials, activities and assessments

We have then built a ‘programme’ or ‘course’.

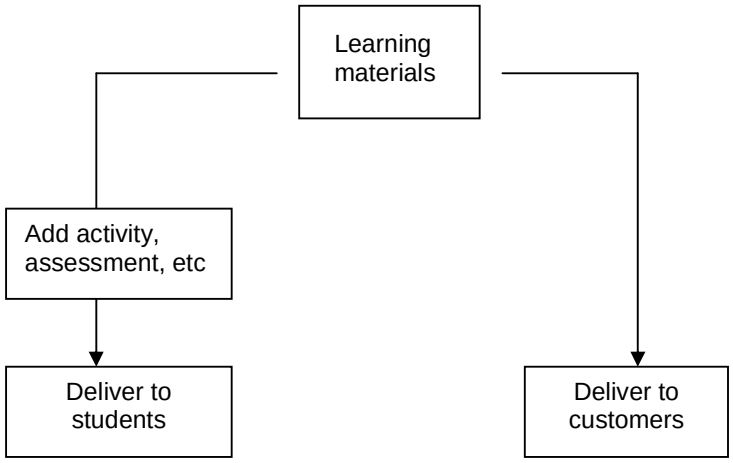
One major factor in making the decisions associated with those (seemingly) simple steps is the nature of the ‘audience’ – who is the learning aimed at. This changes – to some degree – the nature of the materials and/or the activities and/or the assessments and/or the support processes. From my earlier experiences, I have deduced that the least important of the items to be changed with the audience is the materials. The same materials can often be used if the other factors (the ‘wrapping’) are changed.

At Grimsby Institute, we have two main audiences:

- the ‘student’ who is part of a recognised course, usually leading to a formal qualification
- the ‘customer’ undergoing professional or personal development who wants or needs to know, or be able to do, something

The second audience does not want all the ‘trappings’ of being a student. They want quick, easy, preferably low-cost access to the knowledge they need. (Rings quite a few of the eLearning bells!)

Of course these ‘market groups’ can be sub-categorised and sub-divided in many ways but this simple classification leads to another simple process expression.



If this approach can be made to work, we have the basis of a 'write once' strategy … we write our materials and then deliver them to a variety of audiences.

Again, my interest in productivity led me to think further … how do we 'write once' efficiently … productively.

There are two basic strategies for producing online material: train academics in the creation of such materials, or have an intermediary (an eLearning developer) work with academic staff to translate their knowledge into appropriate materials. Most of us have realised that a useful starting point is the 'conversion' of existing printed materials; many of us have also realised that most 'conversions' end up as simple, non-interactive, page-turning (and often quite boring) sets of materials. But this doesn't have to be the case. Whoever does the job (academic turned creator or professional developer) needs to understand something about online pedagogy and interactivity ….. and the 'online pedagogy' depends on whether online materials are used as part of a fully online course or in a blended learning scenario where some materials or some activities will be delivered face-to-face. Then it becomes not so much a matter of choosing a development, creation or conversion tool – but much more importantly, how that tool is used. Again, whoever carries out the process of converting or creating materials, we have to get a 'marriage' of solid content and effective presentation online.

Is it easier to give academic staff appropriate knowledge of online pedagogy and appropriate development skills or to give online developers the interpersonal skills to solicit and interpret the knowledge of academic staff? Both approaches can work .. and indeed the strategy we have adopted is to use both approaches – where appropriate.

So, our aim is to give academic staff an understanding of online pedagogy and then provide the tools for Rapid eLearning Development (RED). We are using relatively inexpensive tools – such as CourseGenie (now retitled Wimba Create) and Camtasia. These two tools alone can create sophisticated materials – in the hands of someone with skill and imagination.

There are some who suggest the output of these is not 'high quality' …. But generally what they mean is that it does not have the visual impact of, say, entirely Flash-based materials. I say "Quality is about the effectiveness of the learning that results" but I recognise that some markets – and some concepts – may need:

(a) additional content (to create, say, sophisticated simulations and animations); or
(b) additional interface elements (to more precisely 'match' the expectations of those expecting high visual impact.

So, sometimes we need to build 'base level materials' and then add 'differentiators' to meet specific needs or address particular markets. The underlying content and learning design is fundamentally the same – so this is a case of 'Write Once, Build More'.

To ensure that this approach includes more 'MORE', we also write our materials as learning 'chunks' – relatively small in size but addressing a complete topic (and set of learning outcomes) so that it can be picked up by someone else and re-used easily.

Where do we store these 'chunks' and how does someone find them so that they can re-use them. Well we looked at 'repositories' designed to store learning objects … and found them too sophisticated. I personally do not think that academic staff will systematically search, in a structured way, for such objects which then have to be built into their own programmes.

Remember, earlier we said that "The second way in which 'adoption' is eased is to work with established groups who already exhibit collaboration and mutual trust." In practice, my experience suggests that people adopt materials because a 'trusted friend' makes them aware of both availability and appropriateness. So, we are not expecting large numbers of structured searches of our (simple) database of learning chunks. We rely on 'social networking' (of established communities sharing common interests) to 'spread the word' …..

chunks get deposited in a simple database and over time MORE people become aware of these chunks and MORE people think .. “I could use that” … and they do!

We then have to deliver our materials (and any supporting services) to our audiences. For our ‘mainstream’ students, we are using Moodle since this offers us the ability to build structured programmes of materials with all the ‘wrapping’ we need to provide a rich learning experience.

It would have been possible to use Moodle also for our ‘customers’ those accessing materials, with little support, on a ‘just when I need it’ basis for personal or professional updating. However, Moodle was felt to be too ‘intimidating’, providing too many barriers to a more casual user. We felt we needed something more like a ‘standard’, e-commerce system such as Amazon where potential customers could browse and then buy quickly and easily if they saw something they liked.

So we decided to build exactly that – an e-commerce, shopping cart-based system … and when I say build, I mean we decided to adopt an open-source (free) system. We also decided to build more than one such system, so that we could have different brands – some aimed at specific markets with specific content, and one containing all of our learning chunks that could be used in ‘free-standing’ mode,

So, a basic strategy now exists – in concept.

Provide academic staff with training and with tools that allow them to rapidly convert existing materials, or create new ones.

Provide expert developers that could work with the academic staff to add into these ‘base’ materials more sophisticated elements of activity and interactivity.

Provide a simple database in which the resulting ‘learning chunks’ could be stored.

Provide mechanisms for getting these learning chunks into Moodle as part of formal, structured learning programmes.

Provide e-commerce facilities to make these learning chunks available to external customers on a commercial basis.

> If all this works we have a process of writing materials once and making them available on a number of platforms to meet the needs of as many potential users as possible.
>
> This is our WRITE ONCE, BUILD MORE, DELIVER MANY strategy.

So far so good … but strategies are useless – unless they deliver!

The next – and probably most important step – was to ‘sell’ this concept to the decision-makers in the organisation. Again, remember the earlier decision to build a demonstrator to ‘show’ rather than ‘tell’ what this concept involved.

Using open source software and standard web-based services, I (and my small team):

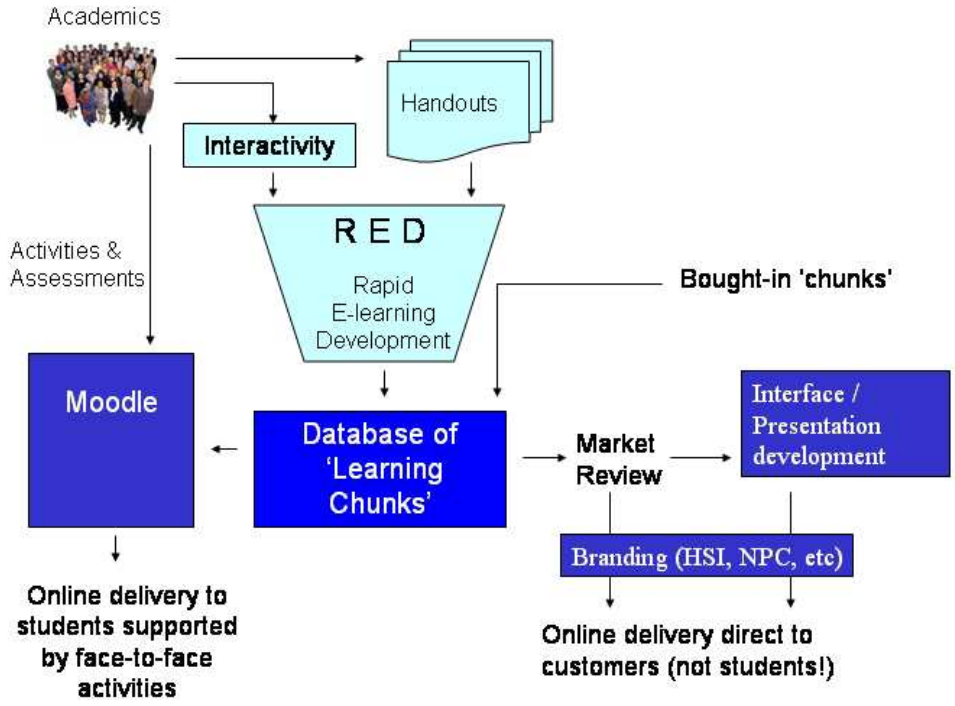
1. Produced a number of example learning chunks. Because of my background I created a number of chunks around the theme of productivity and performance measurement, chunks I knew would be useful to support students on a range of productivity-related courses that were either currently being delivered or were being developed.

2. Produced a sample Moodle course which delivered a number of these chunks together with additional materials and assessments (which could not be made stand-alone and therefore did not meet my definition of a learning chunk).

3. Built an e-commerce site (externally hosted) linked to the website of the National Productivity Centre, which is my primary responsibility at the Institute.

4. Prepared a one-slide PowerPoint presentation to explain the concept (see below)

5. Made an appointment to show all this to the Principal and his senior colleagues.



The Principal said 'YES' and we moved to delivery mode …. Systems are easy … the difficult part is training/developing/motivating/freeing up the academic staff … but that too is going ahead …. and we are moving forward with a clear, simple vision as our target. That 'vision' is too unsophisticated to represent our true aspirations but it is simple enough for all who see it to understand and to support.

My lessons?

Be clear about what you are trying to do. Don't aim too high too soon – keep goals realistic.
Draw a picture of your vision.
Think carefully about who has the 'power' to make your vision a reality .. and think about how best to influence them.
Do rather than plan. Build prototypes, mash-ups, demonstrators – much more effective than concept diagrams.
Move quickly – but remain flexible!