

# Distance Learning Opportunities

## Expanding Cognitive Landscapes

**Dawn Poulos**

What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention, and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.

—Herbert Simon (1971)

Educators work in an information economy where the commodity they most need to do their jobs, the attention of their students, is in ever-scarcer supply. In competition with all the other things that invite a learner's attention, instructors have a challenging cre-

ative task ahead of them. They have to attend to the learning needs of individuals with different levels of interest in the subject matter, or different levels of familiarity with it. They may need to reach night owls in the morning or engage morning people in the evening. Further, even the most motivated of adult learners may have much of their spare attention consumed by current events they follow closely, favorite television shows, or perhaps family matters. These days, even media and entertainment professionals have a tough job getting attention above the noise.

Learning new information requires much more than mere attention. Using information previously learned, adding to and integrating it into a practice of decision making, requires yet more effort. Educators, to be truly effective, need to stimulate metacognition and cognitive adaptability, a learner's awareness of his or her own thinking and the ability to adjust it to new information. This task requires both skill and time, two other commodities that are always in short supply themselves.

Distance learning has become increasingly popular as it is an obviously effective way to maximize both the instructor's lesson preparation time and the learner's



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availability to the material. However, determining where the learners needs convert into market demand presents a challenge. In addition, once a demand is noted, the distance learning organization is then tasked with trying to meet the learner's moment of need while struggling to create content (i.e., learning materials) "on the fly" in order to meet that need. What is the best method to ensure that the supply meets the demand? Reusability can be the answer to this problem.

Reduce, reuse, and recycle. The well-known environmentalist mantra becomes a necessity when managing the scarce and expensive resources that go into composing distance learning courses.

## **REDUCE**

First, let's explore the concept of reduction. How many person-hours can realistically be devoted to a project? Both the creation of fresh instructional material and its adaptation to new forms is time consuming. According to Chapman (2007), 34 hours of development time is required for each hour of instructor-led training (ILT).

Of course, subject specific results may vary with some training taking more or less time. Once a training course has been developed, often for a live classroom setting, it will need to be transformed again into a distance learning course. In 1999, Judith Boettcher, executive director of the Corporation for Research and Educational Networking, released averages for how long this process took for college courses. She and her colleagues determined that it took an average of 18 hours worth of development time, with a normal range of between 5 and 23 hours, to turn an hour of live lecture into a Web-based training course (Boettcher, 2006).

Again, actual time will vary. And though there are better tools available today, content creation will always take up a significant share of development time. Lesson plans, measurement tools, and

guide materials must be readapted. The material will then need to be tested for pacing and clarity in its new format. The work of creating and evaluating the training materials should clearly not be skimmed on. So where does the reduction come in?

Primarily, in making sure that course materials, once laboriously designed and reformatted, can be transferred with maximum ease from one format to another. This enables the author to save the limited instructional design time for the most challenging tasks.

## **REUSE AND RECYCLE**

A significant factor in whether material can be easily reused is whether or not it can be found and identified for what it is. Useful examples of this come from fields as disparate as archeology and software design.

In archeology, the term provenance refers to the full, documented history of an artifact. Where it was found, who found it, who's owned or cared for it, where it's been displayed, and what's been known or discovered about it. With this history, small pottery fragments can help tell detailed stories. Without it, intricately detailed objects of art can be reduced to mere curiosities. This is why the looting of archeological sites is considered such a serious international crime, because it literally steals pages out of human history that might be revealed by trained investigators.

What valuable things are lying around poorly marked in your organization's files? Provenance, or origin and history, is obviously a consideration when dealing with material created by others. But what about one's own material? When one instructor or instructional designer is producing course material that they are the primary keeper of, a person can assume that they'll remember their own work and filing notations.

It is a standard refrain in software design that if you do not document your code, even you won't be able to read it.

The relatively simple code that goes into a plain Web page can be all but indecipherable without much trial and error when it's been poorly laid out and undocumented.

Documentation can be as simple as adding comments or lines of text that do not affect what a user sees. Something that minimal can mean the difference between it taking minutes or hours to find a mistake or make a change.

If course content needs to pass through many hands or be stored for a long time without use, it needs provenance and documentation. In the world of distance learning technologies, this is accomplished through the addition of metadata. Metadata often includes origin information, and even more importantly, relevant keywords and descriptions. What does this material cover? Who is it for? What's its version?

Down the road, the metadata plays a critical role in helping the organization to facilitate collaboration not only within a department, but among scattered training divisions, especially teams around the world. New software programs are available now that offer simple and easy-to-use programs for metadata systems to be established, making it easier than ever for a group to benefit from their data's categorization, collaboration, and content reuse. Consequently, courseware can be built more efficiently without the usual stumbling blocks for most learning programs such as multiple authors, multiple languages, and different editors. The reuse of content and processes can stem across many output types that can then be blended into a variety of learning programs. For example, the opening paragraph from a PowerPoint presentation created in one language from the European division may complement a manual written by another division in Asia, and then worked into an online program in another area of the world.

## **NEED AND OPPORTUNITY**

It's mostly a small, local news story when it happens. Schools across America are cutting language learning, sports, music, or arts education. Renewed emphasis on "basic" education downplays the importance of these sorts of programs. As lamentable as elementary and secondary school teachers must find this, a bare bones, need-to-know approach is as common in corporate training as it is in other forms of corporate communication.

Did you ever hear the story of the discovery of the structure of benzene? Friedrich August Kekulé had a dream of a snake curled into a circle, eating its own tail. From this, he gleaned the final insight that was crucial to determining that the substance benzene, a compound with six carbon atoms and six hydrogen atoms, was arranged in a ring of six carbon atoms held to each other with a uniquely strong, symmetrical bonding structure, and one hydrogen atom bonded to each, projecting outside the ring.

What experiences did he have that such an image was accessible in his subconscious? How did he come to be able to apply it? We can't know. But this common mythological symbol, widely used throughout many cultures that would have been studied in the course of a classical education, must have been known to him. His experiences must have been broader than the many years he'd spent studying the molecular bonds of carbon.

The same idea can be applied to modern day training. The more people learn, the more they discover how to learn and the more their formal training can be blended into their life experiences. When a ready mind meets material of interest, whether that interest comes out of curiosity or need, a memorable lesson creates a whole new universe of information from which a person can gather insight. Individuals might not articulate it quite that way, but when they're ready, they will seek out new

learning experiences, many of which will come from a distance learning program.

## ADULT LEARNERS

It might seem like it sometimes, but people do not get issued computer manuals at birth. Some older learners may need more of an introduction to these technologies in order to pick them up quickly. However, it is more a matter requiring additional exposure to the technology than lack of capacity to learn it.

Older learners are becoming more familiar with the technology that is available these days. iStrategyLabs (2008) reports that for the 10 months between October, 2007 and June, 2008, Facebook's own demographic data showed that their 35-54 year old user segment grew 172.9%. Over the same time period, the 25-34 and over-55 age groups grew in excess of 97%. This growing audience wants to learn and is apparently open to trying out new experiences.

## MANAGEMENT TOOLS

Your organization probably has its own ideas about what specific technology tools to use. You best know your own resource constraints, in terms of time and money, and that of your existing technology infrastructure.

While technology-delivered training has become mainstream in many organizations, most are still not fully leveraging the power of reusable learning content to meet their instructional needs. What would you do if you had to develop and deliver personalized, distance learning programs to 900,000 employees, located in 34,000 different locations globally with a complex set of variables—and that changes in training must occur on a location-by-location basis? The key is reusability.

For distance learning organizations with growing installed bases, the trick again is

managing their program's success without giving away the farm in terms of costs and time involved with creating the programs. There's a trifecta of factors involved:

- timing the content development toward the learner's exact moment of need—to be there when the learner is ready to receive information (*Reduce*—saving development time);
- storing/filing (metatags)/networking the data (*Reuse*—pulling content quickly); and
- blending components from other areas without losing time re-creating the content (*Recycle*—content reusability).

## REFERENCES

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## ADDITIONAL RESOURCES

- Anne Frank lesson. <http://www.teachandlearn.ca/blog/2008/06/02/avoid-school-talk-part-1/>
- Collier language. <http://www.thejournal.com/articles/22396>
- History of SCORM. <http://www.learningcircuits.org/2005/jul2005/ellis.htm>
- Informal & Web 2.0 Learning Practices Survey. <http://informl.com/2008/06/11/informal-web-20-learning-practices-survey/>
- XML for CMS. [http://www.xyleme.com/files/File\\_Share39/docs/white\\_papers/XML\\_for\\_Content\\_wp.pdf](http://www.xyleme.com/files/File_Share39/docs/white_papers/XML_for_Content_wp.pdf)