

Creating Reusable Content: A practitioner's observations

One critical aspect of instructional design is taking into account the differing information conveying characteristics of the media to be used. For example, knowing that video is not suitable for presenting large amounts of text, a designer might compensate by incorporating a separate text component or by using audio with on-screen bullet points. As a result of my long experience as an instructional designer, I am accustomed to identifying and compensating for the strengths and weaknesses of the media to be used in a specific project. Recently I was called upon to design and develop reusable content objects for an online course--*Introduction to ADL and the SCORM*. In the process of this work I encountered several characteristics specific to the design of reusable content objects and developed techniques for addressing these factors.

In this paper I will describe what I observed and briefly present the techniques I developed. The issues had their origins in questions such as these:

- Which, if any, of your related content objects has the learner seen?
- How might you bring learners up to speed on a topic without repeating information across many topics?
- How do you address such things as navigation and visual continuity when you cannot know how your materials will be presented in very different LMS environments?
- How do you create materials that can work together when they are together, yet stand alone in other contexts?

Here are some of the techniques I used.

Catch-up

Writers have developed many rhetorical devices for handling situations where a viewer or reader may or may not have seen earlier installments of a series. Characters and previous events must be subtly re-introduced early in each installment. For example, instead of explicitly noting that “Douglas was a nurse who hated his job” an author would be better served by weaving it into the dialog. Similarly, learning object designers should develop a repertoire of devices for bringing incoming learners up-to-speed without losing learners who “saw the last episode.”

Organizers

Designers have long used visual organizers to tie together various parts of their material. The challenge with reusable objects is to provide central organization where objects can't link to each-other. To address this I employed a graphic that recurs within related materials, showing not only the whole but also where the current topic fits in. (fig. 1, 2) This allows learners to see where they are within a set of related concepts whether or not they have access to the other topics. If they do view other related materials, strong visual cues are used to tie the graphics together in the learner's mind.

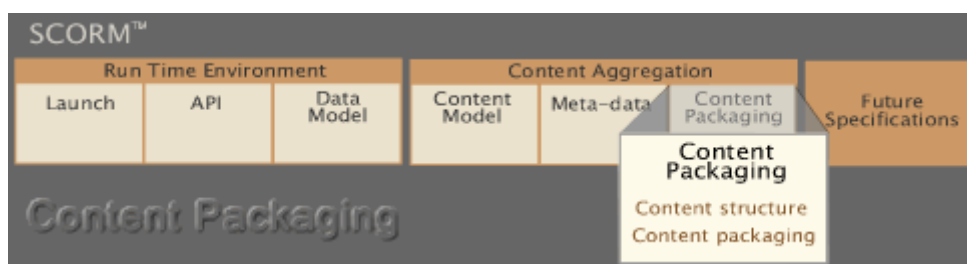


Figure 1. Organizer graphic shows relationship of current topic to whole.

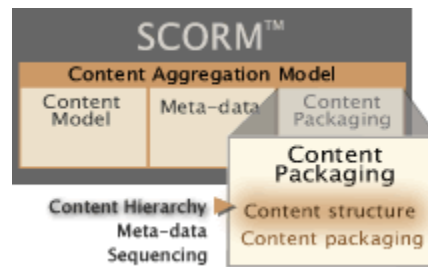


Figure 2. Detailed view visually tied to overview graphic

Separate content and assessments

Assessments are necessarily specific to a certain population or assessment need, whereas a good presentation of content might be appropriate across various populations and purposes, as long as an assessment is not directly incorporated into the topic. With the arrival of robust sequencing capabilities, it should be possible to reuse content while separately providing different assessments for different purposes. Anticipating this, I made the decision not to incorporate assessments directly into my topics.

Navigation confusion

Learning Management Systems necessarily feature their own navigation and menu structure. There is a high potential for learner confusion between these LMS features and any navigation within a reusable content object. (fig. 3a, b) My strategy for minimizing this confusion was to make my navigation somewhat unconventional and to give it strong visual ties to my material making it less likely to be mistaken for LMS navigation. Even so, confusion between two sets of next and back buttons is by far the most common feedback I receive, demonstrating that I am far from solving this issue. One possibility is to open content objects in another window, but for this project I was reluctant to forego having important LMS functions always available.



Figure 3. Content object in an LMS environment. (a) Content object navigation (b) LMS navigation and controls (c) No clear visual delineation below and to the right of embedded content.

Visual design

It is impossible to know much about future contexts for the reusable material you design. Will it open as part of a page containing global navigation and menus, as a figure in an online document, or in its own window without any navigation? Will the interface be highly graphical or very plain? Will learners see all of your topics in a logical order?

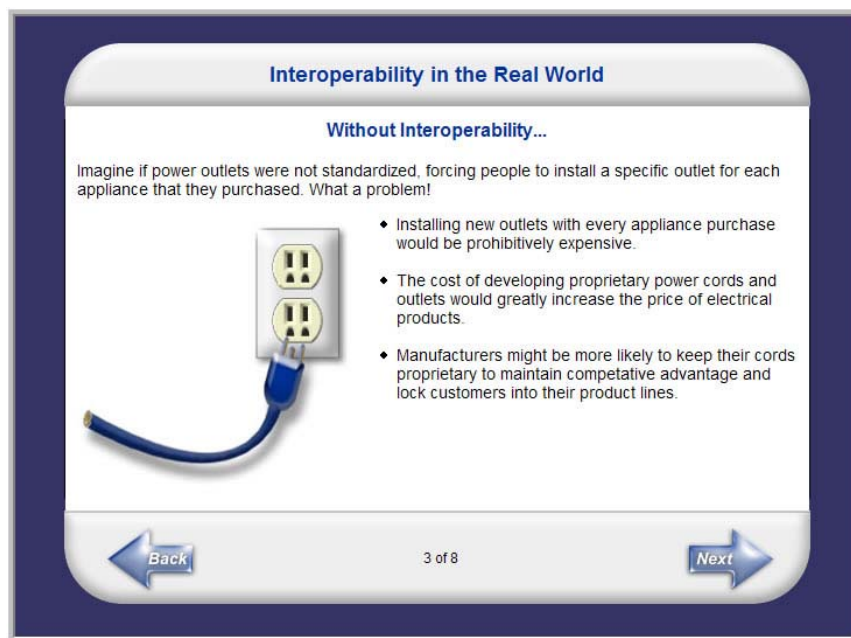


Figure 4. Content object in its own window, showing the design's strong visual "box."

I used several techniques to address these issues. Rather than putting the content in its own visual box, to eventually be placed within other unpredictable boxes when reused, I sought to create a “floating” design that could exist visually in many contexts. (fig. 3c, 4) I paid special attention to maintaining common design elements across topics so they would feel like they belonged together when viewed together, but could also stand alone.

Right-sized SCOs

Finding the optimal “granularity” of reusable content is a continual challenge. Cover too much and your content becomes less reusable, cover too little and it stops making sense. My (admittedly subjective) rule-of-thumb is that a content object should be “big” enough to make sense, but not so big it *only* makes sense in its original context. Keep in mind that as the size decreases (in theory making the content more reusable), both the design challenge and the importance of addressing it increases.

Every medium offers design challenges related to its information conveying characteristics. Because designing reusable content objects is relatively new, many of the techniques for effective design have yet to be discovered by those of us who are actively engaged in their design. Although technological solutions for some of these issues are in the offing, the instructional design community must still work to effectively address these challenges if the medium is to reach its full potential. It is my hope that by describing the issues I have encountered and the techniques I have devised in my development work, I will have contributed to the advancement of the art of designing reusable content.

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