

Designing Asynchronous Content

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As Web 2.0 has infiltrated the classroom, and increasingly sophisticated technology has permitted increasingly sophisticated online library systems, the virtual doors of traditional universities have been flung wide to allow entrance to students of all ages, from all backgrounds, and from all over the world. There is a robust conversation attempting to deal with the challenges and opportunities that all of these factors bring, and librarians are often leading the charge with embedded librarianship in Learning Management Systems (LMS), online workshops, and virtual reference assistance available around the clock. However, we often neglect one of the foundational formats for virtual learners — asynchronous self-directed instruction. The following arguments explore the need for better asynchronous design, identify key hurdles, and set forth best practices in designing solid content.

According to National Center for Educational Statistics (NCES) data, one in four students enrolled in Title IV institutions in Fall of 2012 were participating in some sort of distance education, and one in eight were exclusively online learners (NCES, 2014, table 1). Roughly half of those exclusively online learners was working from a state other than the one in which their institution resided (NCES, 2014, table 11), with no traditional classroom exposure or access to the physical library. Alongside the solid presence of distance learners, there is a trend, notably remarked upon by Bohyun Kim in a 2011 ACRLLog post, for today's students to avoid mediated information, and therefore to avoid personal interaction with a librarian. As Kim rather neatly put it, “users consider our mediation as a speed bump rather than as value-added service,” (2011, ACRLLog). Add to this the tendency of adult distance learners (a growing demographic, thanks to the flexibility offered by online education) to be “self-directed” and “task-oriented,” and you are looking at a population that is less interested in real-time communication, and more interested in quick, painless access to the information and skills that will allow them to accomplish their larger goals (Ladell-Thomas, 2012; Cercone, 2008).

The so-called “DIY generation,” influenced by Google in their pocket and YouTube experts in their kitchens and garages is leaving traditional reference interaction and instruction in the dust as they search for accessible information on their time, and on their terms, a search that can lead to misinformation, frustration, or even failure. Even understanding that academic libraries are traditionally slower (and often rightly so) in adopting new paradigms, it is therefore incomprehensible that we persist in trying to pull these students into reference and instruction formats that, upon review, are simply virtual attempts to recreate passive lecture-style learning. It is not that the traditional formats work better. Research shows that research and instruction within virtual learning environments can be as effective if not more effective than in-person environments, with the potential extra benefit coming from the elements that only asynchronous virtual environments bring, including pacing of content and the ability to refer back to material as needed (Archambault, 2011; McPhee & Soderstrom, 2012).

Asynchronous content further complements the flexibility of distance learning, opening resources to students who might not be able (due to work, familial, or time zone conflicts) to match the schedule of a reference or instructional librarian. How many librarians can tell the same story of highly-rated workshops with low (and falling) attendance? Our content isn't irrelevant, it's simply barred to students who can't or won't make time for synchronous attendance. If falling workshop attendance hasn't told us already, it is time to remove information literacy instruction from the confines of time.

Following this perspective, it also quickly becomes apparent that asynchronous instruction is also beneficial to in-person and on-campus students as well as distance students. So-called "blended format" classes employ an LMS in addition to regular classroom meetings to enhance and extend learning, provide a central location for course materials, and promote reflection on coursework outside of the classroom. While not taking the place of in-person learning, such formats enhance instruction and assist students in tailoring their education to their personal context. The benefits noted by Archambault – ability to review, flexibility of access, and the ability to define pacing – can thus be available to augment in-person learning (2011, 100).

Barriers to Asynchronous Instruction

There are several significant arguments against substantial investment in asynchronous content. In many libraries, the prevailing view is that such-and-such method has been tried, and it faded with time. Students are thought to be uninterested in tutorials, or the platforms are considered ineffective in reaching patrons. Asynchronous content is considered soulless, lacking in the social connections that enhance knowledge building through discourse and contextual interaction with content (Delahunty, 2014). Although the first two arguments may be addressed with stronger content design, the last is a significant issue for asynchronous instruction, and perhaps the greatest reason it has been so often overlooked in innovative library instruction.

Thanks to innovations in chat, videoconferencing, and social media platforms, many libraries are rushing into a future of ever more enhanced and available synchronous service. The idea that students can chat a reference desk at three in the morning or attend a virtual face-to-face consultation from around the world is fantastic, but the model we are currently running on may not be sustainable. Shared reference staffing aside, most academic libraries view virtual availability the same way they view their collections. We spend money staffing virtual reference portals in the wee hours, believing that helping the one student desperate to find information at 3am justifies otherwise inefficient time spent waiting for them. This is a noble mentality, but it is not the most responsible allocation of time, money, or effort. How much better would it be to pair intentional synchronous outreach with equally intentional asynchronous available content? Designed well, such content could fill in the gaps when librarians are unavailable (since, contrary to popular belief, we do not, cannot, and should not live in the library) and serve to support and enhance content when it is delivered in real time. Asynchronous instruction may never entirely match the efficacy of real-time social connection, but with innovative design and paired with appropriate real-time communication as available, it is powerful.

Effective Design Is Everything

Many libraries are excelling at building and maintaining powerful asynchronous content. For examples, look no further than the initiatives coming from the Association of College and Research Libraries Distance Learning initiatives. These libraries and groups are pioneering platforms, design, and innovative instruction to bring their virtual presence to its full potential.

However, online instruction, although it may feel like a standard for some, it still relatively new. It makes sense then that instructional design created exclusively for online presentation, with the unique hindrances and opportunities of the virtual in mind, is still comparatively nascent. Exponential growth and changes in the virtual environment have made it difficult to establish standards, and have outdated content and design much more rapidly than before. What was impossible yesterday quickly becomes the passé of tomorrow. In the midst of this maelstrom of opportunity and transformation, many librarians have made the mistake of attempting to simply relocate their classroom instruction design to the virtual realm. Although this was most likely a fairly effective bridging technique, such designs that remain in the modern iterations of Web 2.0 serve more as barriers to effective virtual education than anything else. Such designs focus on a “pull” mentality that requires input from the student and which often inhibit organic discovery by users. If the student is not already aware of the instruction, or the instructor is unaware of the virtual student, valuable information lies unencountered.

In addition to changing the way information is presented, some claim that the internet appears to have fundamentally changed the way we learn. According to Nicholas Carr, author of *The Shallows: What the Internet Is Doing to Our Brains*, internet use has immediate and significant effect rewiring our neuro-structures, making us more likely to skim while also making us more susceptible to cognitive overload and impeding long-term memory storage for larger concepts (2010, *Wired*). Regardless of how we as instructors may feel about Carr’s assertions, splintering of attention and cognitive overload are realities that are reinforced by social media and other internet lifestyle factors beyond our control. So how to adapt? Rather than presenting an entire workshop’s-worth of content in a single location, research suggests that should begin chunking content into discrete items, single concepts, and simple design. Simplifying our content structure allows us to continue to present complex ideas without overloading students in an environment that already encourages “fragmentation of attention” and in which it makes more sense to tune out than to grapple with the content. By considering how our students access and process our content, we move from the ineffective “pull” context into a dynamic “push” design that meets students where they are and brings them alongside the instructor at their own pace.

In 2013, the Library Information Technology Association (LITA) published a fantastic book, *Using LibGuides to Enhance Library Services*, which features Springshare’s innovative content management system, but which describes principles of design that apply across any sort of asynchronous presentation. The following are several best practices for virtual design adapted from the guide.

Structured Content

When considering asynchronous information literacy instruction, the designer must consider all possible levels of students and their needs outside of time or specific context. Basically, successful asynchronous information literacy instruction must be accessible at any given time to

both the novice learner and the advanced researcher. The design must be navigable to follow logical steps in information literacy development, but those with specific questions also need to be able to drop in at the point of need for discrete answers. To facilitate this, concepts must be discoverable as discrete content items, placed in a larger flow of developmental direction. Consider, if you will, the model employed by W3schools, the web design tutorial site. Each basic coding concept has its own page which can be accessed via a site search or the navigational menu, but each is also linked to the next concept in an overall curriculum design to teach a given coding language as a whole, and there are cross-referencing links within each page to related content. Thus, the site holds a full asynchronous course in HTML, but it can also serve as a resource to advanced coders, and the interlinking allows for more organic discovery of a skill that is not always necessarily linear.

Chunking

Chunking is almost exactly what it sounds like. Smaller concepts are presented together in chunks using visual cues such as paragraphing, bullet points, or even color and shapes to facilitate cognition. Within discrete units of content, which are, in themselves a form of chunking, this theory can be applied to explanations, steps, and even whole site design to assist with flow, allow for judicious skimming, and assist with recall. Given what we know about the fragmentation of attention in virtual environments, utilizing color, focus, and even page composition to indicate the flow of ideas can help to eliminate unintentional cognitive overload on a page.

Scaffolding

It is also important to remember that asynchronous content is unmediated content. In a live classroom setting, we are able to get away with thinking about our content in more complex chunks, because we are able to present each smaller concept within the chunk in a linear fashion and can pause, break down, or otherwise modify our presentation in response to indicated confusion from our students. In the unmediated virtual environment, we must design in the presentation of each singular concept in an order that facilitates understanding, and we must ensure that in each case, deeper information is easily accessible on any given concept (whether through point of need Ask Us! Portals or through the option of additional content). Jamie McKenzie's 1999 characteristics of scaffolding are still a wonderful foundation to work from. According to him, scaffolding:

- provides clear directions
- keeps students on task
- offers assessment to clarify expectations
- points students to worthy sources
- reduces uncertainty, surprise, and disappointment
- delivers efficiency
- creates momentum

Clear directions There is a growing movement in the library world to gather and implement better information on how students think about what they need and the language that they use to

describe it. For example, a 2010 paper by Maximiek et al described using “feedback from transcripts to improve the libraries’ Web site usability and design,” as a major takeaway from their analysis of reference chat transcripts. The literature that followed their study has emphasized themes in patron-based terminology. For example, one study found that students generally don’t use the term ‘periodical,’ preferring the terms ‘articles’ or ‘journal’, and therefore are unable to navigate to useful resources even when the portal is placed as a focal point in the virtual space due to unfamiliar language. With this tidbit among other philological insight, the library chose to rename links to match patron-native language to better direct unmediated queries (Powers et al., 2011).

Clarified purpose Each content item should be clearly aligned with an expressed outcome. A tutorial explaining peer-review should utilize the same terminology and logic as connected tutorials on recognizing categories of literature, perspective and audience, and all should point back to a larger explanation of authority and use of resources on the whole. Design should help the student to understand that each element is useful in choosing sources for their research and should point to contextual application in their studies.

Staying on task Although we understand the havoc that tangential information can wreak in mediated instruction, fragmenting focus and potentially diverting the purpose of a presentation into a completely different direction, we often seem to struggle with its inclusion in virtual environments. In an effort to provide as much help as possible, and sometimes in pursuit of ensuring that there is clarification available for each step in learning, we include information that is not strictly necessary to inform or engage. Information specifically in the “flow” of content should only include that which is necessary to grasp each successive concept. Extra clarification should be included as linked or expandable content that only appears on demand, and tips and other nifty tidbits should be excised or moved to quiet space outside the main flow of information. The idea is not to remove the possibility of following tangential information, but rather to ensure clarity and efficiency of each content item. The Piano Guys’ YouTube channel serves as a useful model for this concept. The filming of their video, “Let It Go (Disney’s “Frozen”) Vivaldi’s Winter” was a fascinating and innovative process, but rather than interrupt the video itself with information about how they accomplished a shot or how they froze a piano, they include a pair of embedded video links at the end of the piece directing the viewer to a “Making Of” video and another related piece of music (ThePianoGuys, 2014).

Clearly communicated outcomes Similar to the principle of clarity of purpose, content should have a clear goal, stated at the outset. This might simply be a descriptive title or description for a research guide, or it might be a statement of learning outcomes in a video or tutorial.

Pointing to “worthy sources” By making a distinction of worthy sources, we are choosing to limit the amount of external direction we present. Again, keeping in mind that asynchronous content is unmediated, and considering the limits of any given student’s cognitive load, design should strive for simplicity and conceptual understanding over provision of options. One of the struggles of designing unmediated content is that it can be difficult to account for variations in question or interdisciplinary facets of research. In order to alleviate this issue, we sometimes try to indicate a selection of “also useful” resources that are tangentially related, but that are not actually authoritative to the subject at hand. The “worthy sources” characteristic suggests that it

may be better to simply indicate this issue openly, and to teach the student to identify sources that will meet the specific needs of their question variant rather than to include such tangential information alongside the specifically authoritative. This characteristic also stresses a sense of quality throughout the design of our content. By only providing the best information, we not only establish credibility as a resource, we also model authority best practices to our learners.

Reducing uncertainty, surprise, disappointment Along the lines of credibility and excellence, we must commit to maintenance of our content. The virtual environment itself needs to function correctly. Links need to be checked, display and loading functions should be ensured, and servers must be maintained for optimum performance. In addition to this, content should be reviewed, updated, and pruned regularly, to ensure that it remains relevant and helpful, and searchability within content must be optimized. If our content fails to function, fails to instruct, or is irrelevant or out of date, we introduce uncertainty into the system. So much of what makes scaffolding work is the consistency within the system such that a patron who understands how to access content in one topic or location can do so again in another. Encountering malfunction or lack of reliability is detrimental to this confidence-building function.

Delivering efficiency Although it is an obvious thing, many of us can lose sight of the purpose of our content if we become too enamored of our design, the information we are sharing, or in any other way lose sight of the patron themselves. At the end of the day, instructional content should be exactly that – instructional. It should save the time of the student. There is a fine line to be walked between comprehensive instruction and efficiency, but if we do not commit to it, not only will we frustrate our patrons, we will lose them. Consider carefully each cognitive requirement you add to your content? Does it assist the patron in grasping the concept, and ultimately in performing effective research and analysis? If you cannot answer in wholehearted affirmation, it is time to return to the design board.

Creating momentum More than anything, the goal of information literacy is to create self-sufficient learners. It is only when our students are independent among the resources that they can truly explore their potential as knowledge creators, and effective asynchronous design should push toward this goal. It cannot be ambivalent, and it absolutely should not bog down. The goal must be to give as much information as is needed in such a way that the learner can visit, get what they need, and return to searching without expending too much effort in parsing out what they need. Rather, it should focus on bringing the learner alongside the expert and then encourage them even further to pursue their own learning. This is not a goal that can be accomplished by untended or passive content. We must strive to keep our videos, guides, and websites fluid and alive, responsive to shifts in knowledge and to the needs of our patrons.

Basic Design Practices

It is an unfortunate truth that humans do judge a book by its cover, and thanks to the ways we tend to interact with the internet, this old adage is even more powerful online. Even the best designed content will be ineffective if we fail to consider how the patron will perceive and receive it. A few major concepts to consider include color, contrast, and overall composition of your virtual space. If you are building a website or content guide, are you using focal points to draw a scanning patron through the content to highlight key concepts? If you are creating a series

of videos, do their color schemes, frame compositions, and general scripts align to “lower the learning curve”? Is there enough “rest space” in your virtual environment, or space that is free of content to balance your focal points? Does your use of too much (or not enough) color fragment attention away from your content? These are all considerations that will enhance asynchronous content and assist the user across an online curriculum.

Conclusion: Content and Intentionality

The persistent theme that underpins all of the design best practices is intentionality. We must carefully consider, design, and cultivate our asynchronous content the same way we do our synchronous instruction. We must remember our audiences and their needs, from the adult learner who has no other portal to the library to the young undergraduate whose education we are reinforcing. We must recognize that even for some students on campus, the virtual library is the only library they will use or recognize as valuable, and we must remember that we cannot be available around the clock to assist with every possible question or to explain the details of overly complex content. While there is a place for jargon, for encouraging critical thought, and for raising awareness of multiple portals, modes, and details, we must give the virtual space the same care in design which we give to the physical space. Given the lack of mediation, we must doubly ensure that our virtual library is at least as navigable as the physical one. When building asynchronous content, we should utilize structure, chunking, and scaffolding to ensure that it is accessible, useful, and continually encouraging our students into greater confidence in research just as our synchronous interactions. Although it may never replace the efficacy of a personal interaction with a librarian, when paired with targeted synchronous interaction, excellent asynchronous content can reinforce instruction, give a student a path to follow or a place to start, and model cognition and logic for those who might otherwise miss the lesson. It is time libraries recognized what a powerful tool they hold in their virtual spaces. It is time we refocused on our asynchronous content.

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