Writing for the Web Using “Just-in-Time” and Performance Support Strategies

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Introduction

One question that all designers of Web-based instruction ask themselves is, “Do our online materials meet our learners’ needs?” Answering this question requires careful consideration of three factors: (1) who the learners are; (2) what their needs might be; and (3) how to design online instructional materials to best meet these needs. At the UW-Madison Writing Center, our primary mission is to provide academic support for undergraduates who need assistance with writing tasks assigned by their instructors. A major component of this academic support is our Online Writing Center, which consists of hundreds of Web pages offering writing advice available whenever students need it. Although the Online Writing Center has been in existence for several years and has been quite popular, to better serve the needs of our learners we were motivated to reevaluate and improve its design. In this paper, we will present and advocate an approach to designing task- and learner-centered Web-based instruction that employs principles of structured writing to meet the demands of “just-in-time” instruction and performance support. We have recently applied this approach in redesigning the Online Writing Center’s Web site (http://www.wisc.edu/writing), from which we will show examples that will demonstrate their improved pedagogical effectiveness. The concepts and methods involved in our redesign are straightforward yet powerful, and will help all designers of Web-based instruction better meet their learners’ needs.

The Importance of Identifying Learners and Their Tasks in Web-Based Instruction

In any pedagogical situation, properly identifying the target audience can help educators tailor their instruction to best convey material to a particular demographic group, and especially so on the Web. In our case, the UW-Madison Online Writing Center Web site aims to provide a wealth of writing instruction available whenever learners need it; our audience primarily consists of undergraduates responding to writing tasks or assignments in their courses, much as in the brick-and-mortar Writing Center on campus. Yet in reevaluating our Web-based instructional materials, we felt that they were not adequately designed to meet the needs of our target audience.

Web usability studies can provide educators with valuable insights for improving the design of their instructional Web sites. The more we understand how users interact with information on the Web, the better we become at designing effective content for online learning. On the whole, usability studies reveal one main user tendency particularly relevant for the design of online instructional materials: people tend to use the Web in a “purposeful” way that is task-driven and focused on getting answers to specific questions, or on obtaining information needed to perform specific tasks and accomplish specific goals. For example, users visit our Online Writing Center Web site not because they want to learn everything there is to know about citing sources using the American Psychological Association documentation system; they come there at 3:00 a.m. the morning before their paper is due, wanting to know how to create an entry in a reference list for a particular kind of source—nothing more, nothing less. Whether it be obtaining information for writing an academic paper, gathering data to make a financial decision, researching restaurants or movies for evening entertainment, or researching laptop computers for purchase, the impetus for going to specific Web sites is largely task-driven. Given the reasons why people actually use the Web, the most effective Web sites are those that enable users to get the information they need quickly and easily.
Knowing how users interact with Web-based information can help educators design and write Web content better suited to how students use the Web medium. If we look outside academia to corporate education and training, one trend is a shift away from content-driven instruction toward task-driven “just-in-time” instruction and electronic performance support. Capitalizing on the fact that people are highly motivated to acquire new knowledge or skills at the time they need them, a just-in-time instructional strategy provides instruction just before the learner needs to apply new knowledge or skills. In contrast, traditional content-driven instruction tends to use a “just-in-case” strategy, often providing abundant and extraneous content not immediately relevant to the task at hand. The concept of performance support goes hand-in-hand with such a just-in-time strategy: a performance support application can replace live coaches and is extremely task-centered, providing users with just enough guidance they need to perform a task at the very time they need it. Unlike in traditional instruction, where the learner gains knowledge decontextualized from the actual “doing” of the task for which such training was intended, in a performance support environment the learner acquires necessary knowledge while performing the task. A well-designed performance support application strives to make the structure of a task explicit such that even novices will be able to perform it. Because of people’s task-driven approach to using the Web, a just-in-time instructional delivery approach using performance support principles—providing just enough information just before users need to apply it—would be well-suited to a Web environment.

One way we have redesigned the Online Writing Center’s Web site to accommodate a more task-driven, performance support format is to rewrite our navigational menus to cater more directly to our learners’ tasks. Our online “Writer’s Handbook” consists of Web pages containing a great deal of information about writing, yet we felt that this information was not as accessible as it could be. Currently, our Writer’s Handbook pages are structured around the content they convey, much as an instructor might present a linear series of lessons. However, we felt that to best serve the needs of our target audience, our pages should above all respond to the writing tasks that they are asked to perform in their coursework. In other words, our pages currently address the “What” of writing, while the needs of our users center more around the “How” of writing. For example, note the changes we have made in our APA Parenthetical Citations menu (Table 1):

<table>
<thead>
<tr>
<th>Placement</th>
<th>Where to place parenthetical citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two or more authors</td>
<td>Cite source with one or two authors</td>
</tr>
<tr>
<td>No author</td>
<td>Cite source with three or more authors</td>
</tr>
<tr>
<td>Multiple references</td>
<td>Cite source with no author</td>
</tr>
<tr>
<td>Punctuation</td>
<td>Cite multiple sources in one reference</td>
</tr>
<tr>
<td>Electronic sources</td>
<td>Cite an electronic source</td>
</tr>
</tbody>
</table>

Table 1: Content-driven menu (left) vs. Task-driven menu (right)

The content of the menu links is still self-evident, but now students can better match their tasks with the tasks presented in the menus.

In educational contexts dealing with relatively stable subject matter, Web designers may be asked to create online learning materials that provide just-in-time instruction with just enough information to help learners accomplish their necessary tasks. To meet these needs, we feel that Web designers should employ design strategies that incorporate elements of just-in-time instruction and performance support. These concepts’ emphasis on users’ tasks underlies a more general shift from content-centered to user-centered instruction. Instead of focusing on what they know themselves, Web designers could first focus on FAQs (what their users need and want to know) and use them as the basis for their content outlines. A user-centered designer ideally would discuss a prototype content outline for a Web site with several potential users, listen closely to their questions and suggestions, and then incorporate user feedback directly into their site design. In this manner, Web designers would be starting from a rigorous user-centered perspective—perhaps the first and most fundamental change Web designers can make to improve their Web writing.

Using Structured Writing to Design User-Centered, Just-in-Time Performance Support

Shifting toward a user-centered perspective allows Web designers better to understand why learners use the Web, but one also needs understand how users actually read online material, and to design it accordingly. Through numerous usability studies, Jakob Nielsen and others have shown that users read Web pages considerably less than they would a printed text. They consistently:
1. **Scan page(s):** Users look quickly at main titles, headings, menu labels, and headlines to determine whether to spend more time there.

2. **Skim content:** Users selectively search for information they want and ignore the rest.

3. **Read and retrieve:** Users start to read only after locating the information they want. If documents are more than a few pages in length, most users will print them out.

4. **Leave:** Users move on quickly after locating the information they want. If the site contains interesting information, they may bookmark it for future use.

We need not look further than our own online behaviors to confirm the above. As the Web is largely used for purposeful, task-driven problem-solving and information retrieval, naturally users would read online text much differently than they would printed documents. For maximum pedagogical effectiveness, designers of online instruction should be aware of Web reading practices when writing for the Web.

Much as the just-in-time / performance support paradigm has helped us address learners’ task-driven needs, Robert Horn’s principles of **structured writing** has helped us learn to write for the Web in accordance with how learners actually read online. Structured writing is a user-centered design model that best allows us to meet the task-driven requirements of just-in-time instruction and performance support, and in turn best meet the instructional needs of our learners. As Horn insists, structured writing is not simply a way of formatting text; it is a way of analyzing a communication and teaching situation. Two major components of structured writing involve the concept of “information blocks” and the “systematic integration of graphics” into documents. In structured writing, information blocks replace paragraphs in terms of content organization and presentation, and consist only of essential, factual information readers need to know to perform a certain task; clearly-labeled graphics, such as tables, aid information blocks in presenting material quickly and efficiently.

Below are two examples of how we redesigned existing material using these structured writing principles. In the first example (Figure 1), the old page for “APA Headings” consisted primarily of text in a narrative format with extraneous information, while the new page employs information blocks and graphics to explain efficiently and visually the complex heading structure the APA system requires.

![Figure 1: Old APA Headings Page vs. APA Headings Page with Structured Writing](http://www.uwex.edu/disted/conference/)
We recognize that performance support and structured writing are not suitable for all written teaching and training materials. For example, if we were trying to persuade users or students of a particular argument or point of view, the conventions of standard prose may be much better suited. The same may be true when we are introducing a complex new topic, or when simple, discrete instructions are too reductive for a given task. Yet when there are learning activities in an online environment that involve mastering a process, and when the context is just-in-time, where users arrive at a Web site needing to learn how to do something right away, these methods of designing instructional material seem ideal—and our extensive user testing confirms that. We would urge everyone developing online learning materials to reexamine their online content for parts that match the just-in-time learning situation, and to follow these principles to better serve their learners’ actual, task-driven needs.

References


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http://www.uwex.edu/disted/conference/
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