Guidelines for Designing Web-Based Instruction in Higher Education

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To develop practical Web-based instruction (WBI) design guidelines for faculty and instructional support staff, the author analyzed three different WBI design cases based on interviews with three experts. On the surface, the WBI design processes that each expert used look more alike than different, entailing similar major steps. The underlying principles and knowledge that guided each expert through the design processes, however, are unique in that each expert constructed her own set of heuristics to accommodate the myriad of contextual factors that arose in the work setting. After discussing the implications of findings, the author presents a six-phase set of WBI design guidelines.

Introduction

The use of Web-based technologies in distance education is burgeoning, and the practice of professional instructional designers assisting faculty in converting their classroom teaching into online courses is an important part of this growth. Still, few studies closely examine the everyday practices of instructional designers in higher education and identify their expert knowledge to benefit a broader audience, such as faculty members who want to develop Web-based courses on their own or less experienced instructional support staff (Carnevale, 2000; Julian, Larsen, & Kinzie, 1999).

The purpose of this study was to develop practical Web-based instruction (WBI) design guidelines to help faculty and instructional support staff in university settings design online courses more effectively and
efficiently. To do so, I interviewed three expert instructional designers from three postsecondary institutions and asked them to articulate their underlying thoughts and principles when designing WBI courses.

**Theoretical Framework**

Romiszowski (1981) identifies two distinctive perspectives in defining educational technology: the *product* and the *process*. The *product*, usually an instructional application, is an outcome that exists as a result of instructional development, while the *process* is the means utilized to achieve that outcome. Just like any type of instruction mediated by technology, we can think of WBI as both an instructional design product and process. The former focuses on what expert WBI designers produce, while the latter focuses on how the experts produce quality WBI.

From the product view, the questions “What constitutes successful WBI?” or “How can we tell well-designed WBI courses from those that are not?” have interested many researchers and practitioners in the field of instructional design (Soong, Chan, Chua, & Loh, 2001; Volery, 2001). Previous studies that have attempted to identify the most influential or “success” factors in designing WBI indicate that *interactivity*, *learner-centeredness*, *collaborative learning*, and *mentoring and scaffolding* are among the attributes of successful WBI (Carr-Chellman & Duchastel, 2000; Hung, 2001; Bonk & Cummings, 1998; Institute for Higher Education Policy, 2000).

Curiously, however, few WBI studies have focused on the process that expert WBI designers utilize to design successful WBI. The product view of WBI identifies landmarks for quality assurance and, thus, provides important insights for evaluation and/or assessment of WBI courses. Contrastingly, the process view of WBI calls for more practical guidelines by further asking questions such as “What process do we need to go through to increase interactivity?” or “How can we ensure collaborative learning in Web-based environments?” Thus, the process view can be more useful for less-experienced instructional designers and practitioners when designing and developing WBI courses. Thus, this view of WBI warrants further research.

**Method**

**Participants**

Simon and Chase’s (1973) classic study on expertise defines an “ex-
pert” as a person who has mastered the knowledge and skills in a certain domain through more than 10 years of intense training and practice. Given the relatively short history of the Web-based technology use in higher education, however, the researcher needs to devise criteria other than this “10-year rule” to define expert instructional designers of WBI.

After soliciting inputs at various professional conferences and personal correspondences with other researchers in the field of instructional technology, I arrived at the following criteria for determining a WBI expert: first, his or her WBI design knowledge and skills; second, peer recognition; and third, considering the intensive interview process required for this study, availability. I then used these criteria to identify and interview three experienced instructional designers or “experts,” representing three different postsecondary institutions, who met all three criteria. Previous studies on expertise have yielded important insights on designing effective instruction (Perez, Johnson, & Emery, 1995). By the same token, I expected that conducting research on expert WBI designers would provide useful information for the design and development of WBI.

Table 1 summarizes the qualifications of the participating experts. The first selection criterion was whether the person selected for interviews has the actual knowledge and skills needed to design and develop successful WBI courses. This knowledge and skills can be gained from two sources: formal training and experience. Thus, only those experts who held advanced degrees in instructional design or related fields and had designed at least 16 WBI courses in university settings over more than three years were selected for the interviews.1

The second criterion for WBI expert was whether the individual is recognized as an expert in WBI design by his or her peers in the field of instructional design and technology. At professional conferences on instructional design, distance education, or related topics, I asked professional instructional designers and faculty who design and develop WBI courses in university settings to recommend their peers whom they believed to be expert WBI designers and then contacted those individuals for interviews.

Eliciting such expert knowledge is a highly demanding and time-consuming process for both the researcher and the participating experts. Thus, the final criterion was the availability and willingness of the individuals to participate in multiple rounds of in-depth interviews and exert their mental energy to elaborate the knowledge and skills underlying their performance in designing and developing WBI.
### Table 1: Participating Expert Profiles

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Highest Degree Earned</th>
<th>Years of Experience</th>
<th>Number of WBICourses Designed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catherine</td>
<td>Purdue University</td>
<td>M.A. in Instructional Design</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Michelle</td>
<td>University of Northern Iowa</td>
<td>M.A. in Instructional Design (currently pursuing Ph.D.)</td>
<td>4</td>
<td>125</td>
</tr>
<tr>
<td>Anita</td>
<td>University of South Florida</td>
<td>M.A. in Instructional Design</td>
<td>3</td>
<td>40</td>
</tr>
</tbody>
</table>

Note. Pseudonyms were used for all participating experts.
Three WBI Design Cases

Case 1: Redesigning an Online MBA Course

In the first design case, Catherine, an instructional designer at Purdue University (see Table 1), worked with a faculty member to redesign an existing online course for Purdue’s executive e-MBA program. The course, titled Applied Quantitative Analysis, explores the application of contemporary concepts and quantitative techniques for decision making in the context of food and agricultural business management. The course was initially developed by another less-experienced instructional designer and had been taught for two years by the same instructor with classes of 16 and 27 students, respectively. Facing numerous student complaints about the course’s complex, unorganized interface and unrealistic student workload, the instructor asked Catherine to help him restructure it with a more intuitive interface and redesigned student assignments. As an outcome of the revision process, the faculty member maintained an individual course Web site on which students accessed communication tools as well as the course outline, lectures, and all other relevant information.

The four main course features of Applied Quantitative Analysis are as follows:

- **Course outline**: This feature listed the activities students needed to complete on a weekly basis as well as provided access to all learning materials, such as readings, lectures, quizzes, assignments, solutions to self-study assignments, and a variety of other learning tools.

- **Discussion forum**: This threaded messaging or bulletin board served as a general forum for class communication. Students used the discussion forum to hold class discussions, ask for help from classmates, and receive instruction on particular assignments or topics from the professor. Students were asked to post assignments or reactions to readings on the discussion forum for review and comment by classmates. This tool allowed students to reflect on course materials and, consequently, made for richer discussion.

- **Lectures**: Lectures were designed to reinforce or high-
light the most important concepts of the lesson and consisted of PowerPoint slides accompanied by audio narrated by the professor. Self-assessments were also available so that students could test their comprehension of the material. Students could download lectures and work through them offline, print slides for note taking and review, and even listen to audio while they traveled.

• Assignments and grades: For each module, students were given mini cases of food and assigned to agricultural business companies and asked to run analyses using spreadsheets. Students could submit homework assignments electronically from the assignment drop-box and access their grades and homework feedback online. In many cases, students received feedback on their work within a matter of days. Students also could access their module grades and review the class average for each assignment or test.

Case 2: Designing a Web-Based Course for the Continuing Education Program

In the second design case, Michelle, an instructional designer at the University of Northern Iowa (see Table 1), worked with a faculty member to convert an existing face-to-face course, titled Communication Theory in Media, for the Web. The course explores contemporary theories of mass communication, learning, perception, and propaganda as they apply to message design utilizing communication media and is an elective in the master’s degree program in educational technology at UNI. Approximately 20 students were enrolled in the course during the spring 2002 semester. About half of the students were teachers at various locations in the state of Iowa working on their master’s degrees online, and the other half were resident graduate students. Previously, the course had only been taught face-to-face and always by the same instructor.

After working with the instructor for two months, Michelle successfully converted the course for the Web. It features WebCT’s popular course tools with the following features:

• Content modules: The modules provided detailed descriptions and explanations for course assignments,
Designing Web-Based Courses

activities, and expectations. The course was divided into seven modules, with each module containing objectives and outcomes, reading assignments, instructor introductory comments, and guiding questions to help facilitate student writing/discussion activities for each module.

• **Communication tools:** The course utilized most of the typical WebCT communication tools to facilitate online interactions. The discussion tool was used to establish a constructivist learning environment where students reflected on and responded to focus questions provided in the content modules. In addition, the course included the WebCT e-mail tool as well as the online chat feature. Both tools helped facilitate student-student and student-instructor interaction. Online chat was used for students to communicate with the instructor during office hours as well as for synchronous group discussions.

• **Grades:** The course did not include any quizzes or exams, which were common in other online courses. Instead, the assessment of student achievement was based on their participation in discussion as well as a final paper.

Case 3: Designing a Multiple-Section, Web-Based Course

The third design case focused on an online course titled General Chemistry (I), which was developed by Anita, an instructional designer at the University of South Florida. The course explored the principles and applications of chemistry, such as the properties of substances and reactions, thermochemistry, atomic-molecular structure and bonding, and periodic properties of elements/compounds. It was a multiple-section course taught by six different instructors. Because General Chemistry (I) is a required course for every first-year student in the chemistry department, more than 1,000 students (200 students for each section) were enrolled during the fall 2000 semester. The course was problematic to convert online because of its volume. Although there has since been some improvement in WebCT server capability, at the time Anita was working with the instructors, the server could not accommodate 1,000 students.
accessing a course shell at the same time. Thus, the course was struc-
tured utilizing a main course shell to serve as an umbrella Web site for
the entire class, which was then linked to separate course shells for each
section.

Featuring WebCT’s popular course tools, the course included the fol-
lowing features:

• **Content modules:** Students could access course mate-
rials (such as lecture notes, PowerPoint presentations,
and references) paced in weekly formats. The module
had 16 units, each containing online quizzes so that stu-
dents could self-test their content knowledge at any
point while studying the module.

• **Communication tools:** The course allowed students to
post and reply to the whole class using threaded dis-
cussion boards. Students could also communicate with
other students and the instructor in real time using
online chat, and the instructor kept virtual office hours
during which students could sign in and ask questions
related to content and the course in general.

• **On-site tutoring:** To complement online lectures, class
discussions, and quizzes delivered over the Web, tu-
tors were available to answer questions regarding
specific course topics or laboratories. Students could
choose from tutoring sessions (one hour each) sched-
uled on-site at eight different time periods during
weekdays.

• **Starting points for students:** Aside from the course Web
site housed within WebCT, the chemistry department
compiled a selective, annotated collection of Web re-
sources for students in general chemistry courses. This
site was structured according to six categories (general
resources, tutorial sites, neat stuff to know, odd stuff,
Q&A, and downloadable software).

Data Collection

I used in-person and phone interviews as primary data collection
methods for the three cases. Once the experts had agreed to participate
in the study, I asked them to complete an open-ended e-mail survey to collect background information about them in order to prepare for the in-person interview protocols (see Appendix A). I then visited each expert in her office to conduct the in-person interviews, which were audiotaped and transcribed for analysis (see Appendix B). Each expert was interviewed from a minimum of three to a maximum of five times, for about 60-90 minutes each time. The number of interviews needed for each expert was adjusted in the course of the investigation as suggested by Merriam (1998), and the interviews were continued until we reached a point of saturation or redundancy.

**Data Analysis**

*Triangulation*

For more thorough data collection and greater breadth, this study involved multiple experts as data sources. The task of WBI design is often perceived as collaborative teamwork requiring more than one person (that is, the instructional designer) to complete. In addition to the three primary experts, I interviewed five professionals who had worked with the primary experts in developing WBI courses, including two instructors for the courses and three technical support staff members. Finally, at various development stages I collected and analyzed relevant artifacts, such as the primary experts’ written correspondence with their clients and support staff and drafts of course syllabi, in order to triangulate the interview data gathered from the experts.

*Member Checks*

I transcribed each interview and brought a summary of it along with tentative interpretations for review prior to the next interview. The experts were then able to correct any of my errors and misconceptions, and I could ask them additional questions to clarify the data already collected.

**Findings and Discussion**

On the surface, the WBI design processes that each expert used look more alike than different, entailing common major steps such as meeting with faculty, developing content, monitoring courses while in progress, and debriefing the instructor and students. The underlying
principles and knowledge that guided each expert through the processes, however, are unique in that each expert developed her own set of heuristics to accommodate the myriad of contextual factors that arose in the particular work setting (for instance, the student population, the program size and structure, the expert’s background).

When asked to identify major factors that affect task difficulty in designing WBI courses, all three experts responded that faculty, students, and content (that is, types and amount of course materials) were the most important considerations.

**Faculty**

The experts were unanimous in confirming that the faculty instructors were probably the most crucial factor to consider when designing online courses. The underlying reasons why each expert considered faculty important in WBI design, however, differed depending on her context. Catherine was concerned about the mindset of individual instructors. She put considerable effort into creating a consistent design across the curriculum and disseminating best practices of online pedagogy. Thus, individual faculty members’ openness to take suggestions and adopt previously established program standards was important for her role as the program’s instructional designer. For Michelle, given the large volume of courses assigned to her each semester, the timeliness and cooperation of faculty to provide course materials and feedback became critical. Anita took on the role of consultant when working with faculty. Her priorities were meeting individual faculty members’ needs and desires as well as those of students; thus, she considered faculty members’ ability to conceptualize their courses and communicate their needs most important.

**Students**

It is not surprising that all three experts identified students as another crucial factor in determining their approaches to WBI design. Whether face-to-face or online, every decision instructional designers make is informed by who their audience is, and the three cases I studied were no exception. Besides student prerequisites and individual learning styles that are usually considered important in the learner analysis literature, students’ experience with the specific program and with other online courses as well as their technical proficiency and access to equipment/bandwidth became important issues for the WBI course designers. Es-
especially when students were taking courses as a cohort, as in the cases of Catherine and Michelle. Designing courses for second- or third-year cohorts became much easier for them because they could assume the level of student knowledge based on courses students had (or had not) taken.

**Course Content (Types/Amount of Materials)**

For Catherine and Anita, course content was important because, depending on the types or amount of materials to be converted or created for the Web, the development/production time and effort could vary from 1-2 days to 3 months. Michelle was most concerned with how much time she needed to develop a new course. But considering that the types and amount of materials (for instance, video or audio components) ultimately affected how much time they could spend on the design, it was evident that content was an important consideration for all three experts.

**Steps/Procedural Knowledge in WBI Design**

The steps or substeps in designing WBI courses identified by the experts remained consistent across all three cases, except for some minor details intended to accommodate case-specific requirements, such as on-site orientations or residencies. When designing a new online course from scratch, all experts went through a similar process, as follows: some sort of preparation to gather course information prior to meeting with faculty; initial consultation meetings with faculty to learn about the course and the instructor and discuss course objectives, readings and assignments, student activities, and grading; course development, whereby course materials were converted to Web formats, chunked, and paced into weekly modules, and course logistics were determined; and ongoing monitoring for course delivery and faculty training whereby they updated and maintained the course Web site and assisted with technical trouble shooting throughout the semester.

Overall, Catherine and Michelle perceived the WBI design process as more standardized and reiterative than Anita did. This might be explained by the way each program was set up. Both Catherine and Michelle supported faculty at departmental or program levels, which increased the likelihood of their working repeatedly with the same faculty members. Because all of the faculty members they worked with were from the same department or program and worked with the same cohorts of students, it was easier for both experts to recycle the WBI design process once they found a system that worked for the particular context.
Dissimilarly, Anita supported faculty at the university level. This means her clients could be faculty members from any discipline, and the courses assigned to her could be at either the graduate or undergraduate level, and for either credit or noncredit. Thus, Anita seemed to be more concerned about accommodating individual faculty members’ needs and to have embraced more “unknowns” than the other two WBI experts.

**Pedagogical Challenges in Designing WBI for Higher Education**

This section discusses some of the pedagogical challenges that the experts faced across the three design cases and how each expert approached the challenges.

**Relationships Between Instructional Designer and Faculty**

In all three cases, the experts underscored the importance to success of building a trusting relationship with faculty. The methods or heuristics each expert used to establish this rapport varied, however. Catherine took instructors to lunch as a way of building an interpersonal relationship with them. She presented herself as more of a coach than a disciplinarian. Michelle used frequent and direct communication as a means of building mutual trust. Anita discreetly utilized her networking with other instructional designers and support staff members to learn about particular faculty members and to get advice on working with “problem faculty.”

The fact that all three experts identified faculty as the most influential factor when designing WBI courses and that a significant portion of the heuristic knowledge elicited during the interviews was about establishing successful relationships indicates that the task of WBI design is as much about interpersonal relationships between the instructional designer and faculty member as it is about instructional design and technology itself.

**Student Workload**

As Carnevale (2001) reported, students taking online courses tend to be easily overwhelmed because they have to deal with new technology and course interfaces, more frequent and heavy written assignments, jobs and other commitments in addition to their online courses, and isolation from their peers and the instructor. It was evident from the
interviews that all three experts were cognizant of these issues and had developed their own heuristics to moderate student workloads throughout the semester. For example, Catherine devised faculty guidelines suggesting that students not be asked to spend more than 20 hours a week for all of their courses combined (up to three courses in most cases). She also advised faculty to be aware of the “flow of the semester” and consider reducing student readings and assignments before and after the intensive two-week residency period. Similarly, Michelle used her experience as a distance-learning student to help faculty understand how much work students could realistically be expected to handle.

**Design of the Course Interface**

“Less is more” was a common theme across all three cases when the experts designed the interface for WBI courses. This minimalist (or functional) approach to interface design is nothing new. Web design gurus like Jakob Nielsen (1999) and Ben Shneiderman (1998) have long advised that the first principle of good design is to understand users’ needs to try to eliminate any difficulties they might encounter while navigating.

Whether the course management systems used were developed in-house or commercially purchased, the experts streamlined the course interface. To minimize student confusion they deleted or inactivated all extra tools and limited the sites to only four or five basic features that were crucial to navigating the course Web site. For example, Catherine applied the same course design template (“course outline”—“lectures”—“discussion forum”—“assignments/grades”) to every course she designed. So did Michelle with her own template (“content modules”—“communication tools”—“grades”—“tutorials”).

**Role of the Instructional Designer**

According to the *Chronicle of Higher Education*, many universities and colleges venturing into Web-based distance education have created instructional support units to help faculty transform their face-to-face courses into online versions, and some administrators believe that instructional designers should have some expertise in a given discipline, as well as skills and experience in project management and instructional design (Carnevale, 2000).

Given the large volume and variety of courses they handle in practice, it is unrealistic to expect instructional designers to be knowledgeable about every WBI course they design. Among the three experts, Cathe-
rine’s hospitality and tourism management background was the closest match for the courses in her program (food and agricultural business management). But overall, the instructional designer’s ability to work with subject matter experts from various disciplines, rather than her subject matter knowledge in certain content areas, seemed to be crucial to designing successful WBI courses.

The role of the instructional designer varied from one case to another, which seems to reflect how each program was set up. On one end, Michelle had worked on more than 120 courses during the previous four years. Thus, her assistance was largely limited to creating course materials and setting up courses in WebCT. This was primarily a consequence of the sheer number of courses she handled every semester. Although Michelle initially provided each faculty member with individual consulting, delivering a course was ultimately considered the instructor’s responsibility, and once the semester began, she did not get involved with the course except for mechanical/technical troubleshooting.

Conversely, Catherine remained hands-on with faculty throughout the course development process, from advance planning to actual delivery. The e-MBA program consisted of four semester modules of which each course was an integral part. The program also had some specific requirements such as a two-week residency each semester and grading stipulations. Catherine’s job was not only to design WBI courses but also to ensure that every course in the program met all program requirements and maintained consistency as a part of the entire e-MBA program package.

Anita’s course involvement fell somewhere between that of the other two designers. The instructional support unit where she worked was loosely structured in the sense that it was not associated with a particular department or program but provided assistance to any faculty member on request. She treated each faculty member as a client and focused on his or her needs when designing courses. Technological infrastructures and staffing in each institution also seemed to be a factor in determining the role she played. The resources available to her instructional support unit, which consisted of multimedia specialists, graphic designers, and computer programmers as well as her peer instructional designers, enabled Anita to act as an instructional design consultant, directing her clients to various delivery options to best suit their instructional needs.

Regardless of these differences, when designing WBI courses, all of the experts demonstrated the ability to use heuristics to achieve the following goals:
• To recognize and cope with contextual constraints to meet the needs of faculty, students, and the program/unit.

• To best utilize available resources (technology infrastructures, campus-wide support structures).

• To draw from their unique backgrounds (corporate professionals, former experience as a distance-learning student) as well as their training as instructional designers.

• To maintain integrity and rigor in their courses by assuring interactivity and quality control.

• To plot and pace content and activities according to the “flow” of courses.

Conclusions:
Guidelines for Designing Web-Based Instruction

Based on the findings emphasized by the participating experts in the three cases described here, I present a set of guidelines for WBI design in Appendix C.

The primary purpose of the guidelines is to make the three participating experts’ overall WBI design process, as well as the underlying principles and knowledge that guided them through the process, available to interested online instructors and instructional support staff. It is my hope that showcasing some current, tested WBI design practices used by the participating experts will help both faculty and instructional designers work together more effectively when developing online courses.

The guidelines are by no means exhaustive or authoritative and may not be applicable to all WBI design cases. My suggestion is that readers carefully examine the WBI design factors and the context-specific considerations described in each design case before judging the applicability of the guidelines to their own design contexts.

As a next step, I invite readers to advance the research in the WBI design process by sharing their expertise with a wider spectrum of WBI design practices in higher education.
Footnote

Simon and Chase’s classic study on expertise argues that a 10-year period of intense preparation is necessary to reach a level of “expertise” in most domains. This figure of 10 years has been accepted by many researchers as a criterion for determining one’s expertise (Ericsson & Charness, 1997; Simon & Chase, 1973). However, given the fact that the World Wide Web has become generally available to the public only since about 1996, the so-called “10-year rule” is not applicable in this case, and I have modified the criterion accordingly.

References


**Ji-Yeon Lee** is assistant professor of educational technology in the department of educational psychology at the University of South Carolina. Her research interests revolve around the instructional use of Web-based technology, faculty/learner support in distance learning environments, and Heuristic Task Analysis (HTA).
Appendix A
Interview Protocol: Pre-Interview Questions

Note. After agreeing to participate in this study, each participant was asked to complete this e-mail survey to provide background information about his/her experiences with designing Web-based courses in university settings.

1. Can you tell me a little bit about your experience with designing online courses?
   • How long have you been designing online courses at your current institution?
   • Did you work for any other institutions before you came to your current institution?
   • How many online courses have you designed (if you’re not sure, please estimate)?
   • What kind of training did you receive related to online course design (e.g., degrees in instructional technology or related fields, workshops, attending conferences, etc.)?

2. Can you tell me about your work environment at your current institution?
   • Are you working in a team to design online courses?
   • If so, who are your team members in terms of experience and expertise, and how do you divide work on your team?
   • What types of support (technical and non-technical/administrative) do you receive from the university?
   • What kind of course development/management platform is used in your current institution (e.g., Blackboard, WebCT)?

3. Can you tell me about online courses that you’ve designed?
   • I assume that you’ve worked with many faculty members across disciplines (humanities, social science, natural science, etc.). What were some of the content areas for your courses?
   • Among many courses you’ve designed, I assume that some courses were more difficult/challenging to design than others due to certain conditions (nature of course content, demanding faculty members, atypical course assignments, large class size, etc.). Based on your experience, what are some of the major factors that affect task difficulty in designing online courses?

4. Among the courses you’ve designed, can you describe a particular course that is simple yet representative of your job as a WBI instructional designer? Can you provide me with contextual information about the course (e.g., content area, class size, the faculty you’ve worked with, timeline for course development, etc.)?
Appendix B

Interview Protocol: In-Person Interview Questions

Note. These questions served as a general guideline for the in-person interviews. The researcher was not restricted to the predefined questions, and the overall interview process was flexible, emergent, and reflective in nature. In other words, depending on the strengths and weaknesses of the initial interviews in identifying task expertise, the researcher revised the HTA method for each subsequent interview.

1. Tell me about your previous experience(s) in designing WBI. Which of your WBI design experiences do you think of as the simplest? Is this still representative of them all?

2. What were some of the conditions (e.g., subject areas, class size, and people to work with) that distinguish that case from others?

3. What were some of the major decisions that you made during that case?

4. What process did you go through to make each decision?

5. What knowledge (i.e., steps, guidelines, descriptive models, and decision rules) do you believe led you to make those decisions?

6. How does such knowledge work (or not work) in designing other similar WBI courses? Why?
Appendix C
Guidelines for Designing Web-Based Instruction

<table>
<thead>
<tr>
<th>Phase</th>
<th>Steps and Guidelines</th>
</tr>
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</table>
| I. Prepare for Initial Meetings with Faculty. | 1. Send reminders to faculty members who will teach WBI courses.  
a. Give faculty a general timeframe for delivering course materials.  
b. Ask faculty to send the syllabus and existing course materials (if any).  
2. Arrange a consultation meeting with faculty.  
a. If faculty members cannot meet in person, arrange phone conversations.  
3. Prepare for the meeting.  
a. Arrange the logistics for the meeting (e.g., reserve a conference room with Internet access).  
b. Select a couple of previous WBI courses to show faculty during the meeting (ask instructors permission to share those courses).  
4. Build trusting, long-term relationships with faculty.  
5. Designing an online course is often an ongoing, reiterative process, and building mutual trust and rapport between faculty and the instructional designer is crucial to success. |
II. Meet with Faculty for Initial Consultation.

5. Ask faculty members to explain their courses.
   5.1. Ask faculty members if they taught the course previously.
       If yes, ask them to explain how they taught the course.
       • When first meeting with an instructional designer, the opportunity to talk about their courses helps make them more comfortable sharing their course preparation.
   5.2. Ask faculty members to explain what they want to accomplish with the course. What do they want their students to do? What types of materials do they want to use?
   5.3. Ask faculty to explain the nature of the course. Is the course for credit or non-credit? Is it going to be self-directed or instructor-led?
       • If the course is for non-credit, consider the following:
         — Students taking non-credit courses do not have the critical incentives, grades or credits, to keep them motivated. Most are working professionals who want to expand their knowledge for the sake of knowledge.
       • If the course is self-directed, use the following guidelines:
         — There are no exams or assignments to be graded in self-directed courses, and thus it is difficult to monitor student progress throughout the semester. Tracking features found in most course management systems allow instructional designers to check the amount of time students spent reviewing the content.
   5.4. Ask faculty members how much interactivity they want in the course. How much are they willing to get involved and interact with students?
       • Set up a realistic expectation for faculty involvement. Faculty members often underestimate the amount of time and effort needed to interact with their students and grade assignments.
### Appendix C

**Guidelines for Designing Web-Based Instruction (continued)**

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<tr>
<th>Phase</th>
<th>Steps and Guidelines</th>
</tr>
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| II. Meet with Faculty for Initial Consultation (continued) | 6. Discuss the basic course structure with faculty.
| | 6.1. Review the syllabus or existing course materials, if any, from previous semesters with faculty.  
| | 6.2. Discuss student activities and assignments with faculty.
| | • If students have been in the program for a while and taken courses as part of a cohort, share what students already know and what they are accustomed to, so faculty members can build class activities based on previous student knowledge and experience.
| | • There is a synergistic effect when what students are doing for one course is relevant to other courses.  
| | 6.3. Explain available course delivery options to faculty.
| | • Faculty members may resist taking suggestions when they do not understand the need to change their course preparation for online courses.  
| | • By assuming the role of coach, rather than disciplinarian, instructional designers can make suggestions to faculty in more constructive ways.
| | • Ultimately, faculty members own their courses, and nobody can force them to change the way they teach, unless they see, or are shown, a better way.  
| | 6.4. Show some WBI course examples to faculty members to help them conceptualize their courses over the Web.
| | • Faculty members who are new to online teaching tend to insist on replicating their face-to-face teaching. A tour of previous online courses helps them better understand what to expect from, and how to prepare for, their online courses.  
| | 6.5. Give an informal orientation on online teaching and course preparation to faculty. |
II. Meet with Faculty for Initial Consultation (continued).

6.6. Communicate expectations and responsibilities to faculty clearly and up-front.

6.6.1. Discuss course development protocol (i.e., formatting and editing guidelines for course materials).

- By assuming the role of disciplinarian when it comes to project management, instructional designers can expedite the course development process.

6.6.2. Negotiate expectations about student support.

III. Develop Content for the Course.

7. Take care of course logistics.

7.1. Create a course account.

7.2. Order textbooks.

7.3. Clear copyrights for articles, Web resources, and other materials to be used for the course.

8. Ask faculty to send course materials.

- When the instructional designer has a large volume of courses, it is more efficient to concentrate on one course at a time rather than simultaneously working on multiple courses.

- Sending faculty members a reminder of what to prepare and when it is due helps their course preparation and thus expedites the development process.

9. Design the course interface.

9.1. Provide a simple and functional course interface for students.

- Students are more successful and efficient when given limited navigational options.

- If faculty members do not delete all extra tools, students can easily get distracted or confused.

- If students have been in the program for a while and taking courses as part of a cohort, make the course interface as consistent with other courses as possible. Consistent interface design saves significant student time and effort by reducing the need to learn new course structures every semester.

9.2. Add customized tutorials for course tools.

- Customized tutorials can minimize student confusion and frustration with new tools. They can also be used as points of reference when handling student inquiries about specific tools.
### Appendix C

**Guidelines for Designing Web-Based Instruction (continued)**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Steps and Guidelines</th>
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| III. Develop Content for the Course (continued). | 10. Structure student activities.  
- Consider three types of interaction to ensure the best learning outcomes: interaction between students and the content, interaction between faculty and students, and interaction among students.  
- Help students establish rapport with their online community.  
10.1. State objectives and expectations for each activity clearly and up-front.  
- Prerequisites for completing course assignments need to be stated in advance so students can prepare themselves accordingly.  
- Students tend to do “minimum work” when they are not given clear instructions in terms of what they are expected to do and how their work will be graded.  
10.2. Chunk materials into weekly lessons or modules.  
- Be realistic when assigning students weekly readings and assignments:  
  - In addition to taking courses every semester, many distance students have job commitments. Thus, faculty members need to understand that students can only spend so much time (about 20 hours) for all courses combined.  
  - There are certain times of the semester when students can get easily overloaded. Thus, faculty members need to plot and schedule activities and assignments to even student workload, considering the “flow of the semester.”  
  - By having the first week of class as a “welcoming week,” students can have a chance to get to know each other (and the instructor) and explore new course environments. |
III. Develop Content for the Course (continued).

10.3. Determine the tools to be used for the course and explain their implications.

- For online chat, use the following guidelines:
  - With most course management systems, faculty can archive the chat, which helps students who missed a chat or those who want to reference previous dialogues.

- For discussion boards:
  - Student participation in discussion increases when topics are broad and there is room for each student to make unique contributions.
  - Allow at least 2 weeks for students to complete their readings, post initial comment, and respond to other students.

- For online office hours:
  - Online office hours provide the same kind of synchronous interaction with students with less time investment.

10.3.1. Discuss which tool will best suit the instructional needs of faculty.

- When adding new features to the course or introducing new technologies, faculty members can make the transition smoother by targeting and testing more advanced students before implementing the tools on a larger scale.

- When faculty members are not familiar with particular tools, ask the instructors to add new faculty members to ongoing courses so they can get a sense of how things work online.
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<th>Phase</th>
<th>Steps and Guidelines</th>
</tr>
</thead>
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| IV. Edit Content for the Course. | 11. Edit course content and instructions on student activities/assignments. 
   11.1. Send converted course materials to faculty for feedback. 
   • Establish a clear protocol to expedite multiple rounds of the editing process. 
   • Editing course materials on hard copy reduces the likelihood of miscommunication between the instructor and the instructional designer. 
   • Completing a certain portion of materials that is representative of the course and sending it to faculty for interim feedback does not only help faculty stay informed and involved, but also saves a great deal of revision time and effort. 
12. Revise course materials based on faculty feedback. 
13. Populate the course account with registered students. 
   • Send notifications to students with instructions on how to access the course Web site. |
V. Update and Maintain the Course Web site.

14. Update course content.
   14.1. Determine the need for schedule adjustment (e.g., dropping assignments, changing assignment due dates).
   14.2. Update any changes in assignment due dates.
      - Making big changes (e.g., adding new assignments, changing due dates) during the semester increases the chance of miscommunication.
      - By consulting with other instructors about overlapping due dates and informing students in advance, the instructor can help students adjust their schedules.
      - Every time the instructor makes changes during the semester, students may fail to keep up with the changes and miss something.

14.3. Provide ongoing training for faculty and TAs.

14.4. Monitor the course in progress.
   14.4.1. Check the gradebook and discussion forum on a regular basis.
   14.4.2. Remind faculty of grade due dates.

14.5. Assist faculty in conducting formative and summative course evaluations.

14.6. Respond to student questions.
   - Setting up a separate discussion board for technical questions helps reduce faculty workload and provide students timely assistance.
Appendix C

Guidelines for Designing Web-Based Instruction (continued)

<table>
<thead>
<tr>
<th>Phase</th>
<th>Steps and Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>VI. Have an Exit Meeting with Faculty.</td>
<td>15. Schedule a meeting with faculty at the end of semester.</td>
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<td>16. Share course evaluation data and student comments with the instructor.</td>
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<td>17. Discuss areas of strength and weakness for the course.</td>
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<td></td>
<td>18. Discuss any need for course revision.</td>
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</tbody>
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